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Practical Lessons in Fractions

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PRACTICAL

LESSONS IN FRACTIONS

BY THE

INDUCTIVE METHOD

ACCOMPANIED BY FRACTION CARDS

BY

FLORENCE N. SLOANE
EDWARD EVERETT SCHOOL, BOSTON

BOSTON, U.S.A.
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PREFACE.

THE children in the third-year grade of the primary school are expected to answer such questions as, $\frac{3}{4}$ of $ 28 = ? $\frac{4}{5}$ of 40 apples = ? $\frac{5}{7}$ of 56 peaches = ? etc.

There are ways by which the child can be taught to obtain answers to such questions, without his gaining any idea of what fractions really are.

He can learn that because $2 \times 4 = 8$, that $\frac{1}{4}$ of 8 is 2; and 4 times 3 being 12, that $\frac{1}{4}$ of 12 is 3; and as 4 times 7 are 28, $\frac{1}{4}$ of 28 is 7. Then, as $\frac{3}{4}$ of 28 is asked, he takes 7 three times. Yet, if you were to ask him which is the larger, $\frac{1}{4}$ or $\frac{1}{5}$, he would in most cases answer $\frac{1}{5}$, because 5 is larger than 4. This plan works quite well with certain children, while with others who are slower, it does not. Again, if the child does not know his tables, or forgets them, he has no way of obtaining his answers.

Most teachers, I believe, try to give the children an idea of what halves, thirds, fourths, etc., are, by dividing objects or figures, either circles or lines, into fractional parts, so that they may know that the objects must be divided into two or more equal parts.

If this plan were carried on, the children would gain some idea of fractions, but it is rather difficult, with only this amount of drill, to think of 56 apples and divide them into 7 equal parts.

I found great difficulty in getting children to think out such questions. It was owing to the suggestions of Mr. F. H. Ripley, Master of the Bigelow School, Boston, that I came to work out the plan which is explained in this book.

I first cut pasteboard circles into fractional parts and had the children come around a number table. This plan proved successful with small classes, but with a class of sixty children, the time allotted to arithmetic was entirely insufficient when divided among four or five divisions.

Accordingly, I drew circles on brown paper and divided them into halves, thirds, fourths, etc., making enough for each child to have one of each kind. These circles the pupils cut out, subsequently dividing them into fractional parts, using the scissors provided by the city for paper-cutting. Of course this plan required a great deal of time and labor on my part, but it seemed to work very well. I have now taught fractions by this system for four years, making such improvements in the method as were suggested by practical lessons with the children.

The children enjoy the work, and even the dullest seem able to grasp it. While they are learning fractions, they are at the same time reviewing their multiplication and division tables, as well as addition and subtraction.

Some of the questions seem perhaps, at first sight, to be rather too difficult for young children, and would be if they were obliged to apply any rule in order to answer them; but they do not. The child has objects at first, and afterwards such a clear picture of them in his mind, that he has only to refer to that in order to think out the questions.

It is at the request of several teachers, who have seen this system in practical operation, that this book has been written.

PART I.

TEACHERS' EDITION.

PRACTICAL LESSONS IN FRACTIONS.

PART I. — TEACHERS' EDITION.

HALVES.

Hold before the class an apple, pear, or anything that can be cut easily into halves, and ask the children to tell what it is. Then cut it into two equal parts and have them tell what has been done. [They should notice that it has been cut through the centre, and that both pieces are of the same size.] Ask if any child can tell what each part is called. Write *one-half* in words and figures on the blackboard. Next put together the two halves, and call attention to the fact that it is no longer a whole apple, as it has been cut or divided, but that it is equal to one. Take away one-half, and have them tell what is left. Put both parts together again, and take away two halves, and show that nothing is left.

Give each child a card with a circle marked on it, and a line drawn through the centre. Direct children to cut these out carefully, and notice that each has a whole circle. Next have each circle cut through the line into two equal parts. Direct children to do with their circles what has been done previously with the apple.

It is also a good idea to divide lines, squares, and oblongs into halves.

The children may be allowed to call their circles either apples, oranges, pies, or any other name they choose, and many practical examples can be made by teacher and pupils.

FOURTHS.

The children having cut their circles into halves, using the dark or strong line for that division, each half should be divided into halves by cutting through the middle line. Have the parts counted, and have the children notice that the circle is now divided into four equal parts. Give name for each part, and write it in words and figures on the blackboard. Also give the word *quarter* as meaning the same thing. Have fourths put together to form a circle and call the children's attention to the fact that it is no longer a whole circle, although equal to one. Have the children tell how they would divide anything into fourths, using the circle for illustration. They have now learned that in one circle there are four fourths. Have the circle divided into halves, and the number of fourths in one and two halves counted. Have the children notice that one circle, two halves, and four fourths are equivalent.

Have fourths taken away from the circle successively, and these facts taught: $1-\frac{1}{4}=\frac{3}{4}$, $1-(\frac{2}{4}$ or $\frac{1}{2})=\frac{1}{2}$, $1-\frac{3}{4}=\frac{1}{4}$, $1-\frac{4}{4}=0$. Have the children find what must be put with $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ to complete the circle.

Next have them find how many times $\frac{1}{4}$ must be taken to make $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{4}{4}$. Also into how many equal parts $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{4}{4}$ must be divided to get $\frac{1}{4}$. Lines, slips of paper, paper squares, and oblongs should also be divided into fourths by the children.

Until perfectly familiar with the subject, the children should use their circles when questions are given.

EIGHTHS.

Review halves and fourths. Then have each fourth cut into halves. Have the number of equal parts counted, and give name for each and write it in words and figures on the blackboard. Have the eighths formed into a circle, and have this divided into halves and the number of eighths found in one and two halves.

Have the circles divided into fourths, and children find how many eighths are in one, two, three, and four fourths.

Have children notice that one circle, two halves, four fourths, and eight eighths are equivalent, and that $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{4}{8}$ are also equivalent.

Have the eighths taken from the circle consecutively, and then have children take one, two, three, four, five, six, and seven eighths, and find how many eighths must be added to each to complete the circle.

Have children take from the circle one, two, and three fourths, and find the number of eighths that will be left. Also, the number of eighths that must be added to one, two, and three fourths to complete the circle.

Questions in addition and subtraction can be worked out by the children under the direction of the teacher.

Have the children find how many times $\frac{1}{8}$ must be taken to make $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, and $\frac{8}{8}$ or 1 circle, and into how many equal parts each must be divided to get $\frac{1}{8}$.

Lines, slips of paper, and paper squares should also be divided into eighths. Clay spheres can also be divided into halves, fourths, and eighths.

THIRDS.

In teaching thirds, sixths, and twelfths the same circles may be used. When studying thirds, the children should be directed to cut through the heavy lines, which will divide the circle into three equal parts. After the circle has been cut, have the children notice that it has been divided into three equal parts. Give name for each part, and write it in words and figures on the blackboard.

Have circle formed, and thirds taken away consecutively.

Have the children find what must be added to 1 and 2 thirds to complete the circle; how many times $\frac{1}{3}$ must be taken to make 2 and 3 thirds, and into how many equal parts 2 and 3 thirds must be divided to get $\frac{1}{3}$.

Also the addition and subtraction of thirds. Children should also divide lines, slips of paper, and squares into thirds.

SIXTHS.

The children having cut their circles into thirds, direct them to cut each third into halves.

Have parts counted and formed into a circle. Give name *one-sixth*, and write it in words and figures.

Have some child describe the way in which he divided his circle into sixths (*e.g.* first into thirds, then each third into halves).

Have circles again formed, and this time divided first into halves, then each half into thirds, and have process described by the children.

Have circles divided into halves, and the children find the number of sixths in 1 and 2 halves.

Have circles divided into thirds, and the number of sixths in 1, 2, and 3 thirds found.

Call the children's attention to the fact that 1 circle, $\frac{2}{2}$, $\frac{3}{3}$, and $\frac{6}{6}$ are equivalent, and also that $\frac{1}{2}$ and $\frac{3}{6}$ are equivalent.

Have the children compare $\frac{1}{2}$ with $\frac{1}{3}$. Also $\frac{1}{2}$ with $\frac{2}{3}$, and find how much larger or smaller one is than the other.

Have sixths taken away from the circle successively. Next have the children find how many sixths must be added to 1, 2, 3, 4, and 5 sixths to complete a circle.

Have the children take away $\frac{1}{2}$ of a circle, and find the number of sixths that will be left. Then have them find how many sixths must be added to $\frac{1}{2}$ to complete the circle.

Next have 1 and 2 thirds taken away, and the answers given in sixths.

Have the children find how many times $\frac{1}{6}$ must be taken to make 2, 3, 4, 5, and 6 sixths, and $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{2}{3}$. Also into how many equal parts each of these fractions must be divided to get $\frac{1}{6}$.

Have the children work out, under the teacher's direction, the questions in addition and subtraction.

Slips of paper and lines should also be divided by the children, sometimes having them divided first into halves and then each half into thirds, or *vice versa*, first into thirds, and then each third into halves, until they are perfectly familiar with both ways.

TWELFTHS.

Using the circles that have been cut into sixths, direct the children to cut each sixth into halves. After the circle has been cut into twelfths, the parts counted, and name *one-twelfth* given, have the process by which it was cut described by some child, having him use his circle for illustration.

Next have circles divided into fourths, then each fourth into thirds, and this process described.

Have circles divided into halves, then each half into sixths, and this way described.

Call the children's attention to the fact that 1 circle, $\frac{2}{2}$, $\frac{3}{3}$, $\frac{4}{4}$, $\frac{6}{6}$, and $\frac{12}{12}$ are equivalent.

Have circles divided into halves, and the number of twelfths found in 1 and 2 halves. Then into fourths, and the number of twelfths in 1, 2, 3, and 4 fourths.

Next into thirds, and lastly into sixths, the number of twelfths being found each time.

Have the children notice that $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{6}{12}$ are equivalent.

Have them compare $\frac{1}{4}$ and $\frac{1}{3}$; $\frac{1}{3}$ and $\frac{1}{2}$; $\frac{1}{2}$ and $\frac{2}{3}$; $\frac{2}{3}$, $\frac{3}{4}$, and $\frac{5}{6}$.

Have them take the twelfths from the circle, consecutively, and then find what must be added to 1, 2, 3, 4, 5, etc., twelfths to complete the circle.

Have 1 half; 1 and 2 thirds; 1, 2, and 3 fourths; 1, 2, 3, 4, and 5 sixths, taken from a circle, the answers to be given in twelfths. Have the children also find what must be added to each of these fractions to complete the circle.

Have them find the number of times $\frac{1}{12}$ must be taken to make 1 half; 1, 2, and 3 thirds; 1, 2, 3, and 4 fourths; 1, 2, 3, 4, 5, and 6 sixths; and 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 twelfths. Also into how many equal parts each of these fractions must be divided to get $\frac{1}{12}$.

Under the teacher's direction the children can work out any number of questions in addition and subtraction.

Lines, slips of paper, and paper squares should also be divided into twelfths by the children.

NINTHS.

The children will now require new circles, divided by lines into ninths. These should first be cut through the heavy lines into thirds and a review taken of that subject. Then have each third cut into thirds, the parts counted, and name *one-ninth* given and written in words and figures.

Have children divide their circles into thirds and count the ninths in 1, 2, and 3 thirds. Have the thirds taken away from the circle, and the children find the number of ninths that will be left each time. Also the number of ninths that must be added to 1 and 2 thirds to complete the circle. Have ninths taken away successively, and have children find what must be added to 1, 2, 3, etc., ninths to complete the circle.

Have the children find how many times $\frac{1}{9}$ must be taken to make 1, 2, and 3 thirds; and 1, 2, 3, 4, 5, 6, 7, 8, and 9 ninths. Also, into how many equal parts each of these fractions must be divided to get $\frac{1}{9}$.

The questions in addition and subtraction should be worked out by the children under the direction of the teacher.

Lines, slips of paper, and squares should also be divided by the children into ninths.

FIFTHS.

The children should have circles divided by lines into tenths, five of these lines being drawn heavier than the others. These should be cut first, thus dividing the circles into fifths.

Have these counted by the children and formed into a circle.

Give name *one-fifth*, and write it in words and figures.

Have fifths taken away consecutively, and the children find what will be left each time. Also, what must be added to 1, 2, 3, and 4 fifths to complete the circle.

Have the children find how many times $\frac{1}{5}$ must be taken to make 2, 3, 4, and 5 fifths, and into how many equal parts each of these fractions must be divided to give $\frac{1}{5}$.

Questions in addition and subtraction to be worked out by children.

TENTHS.

The children having divided their circles into fifths, direct them to divide each fifth into halves. Have them count the parts and form them into a circle. Give name *one-tenth*, and write it in words and figures. Have process of cutting the circle into tenths described by children, using the circle for illustration.

Have circles divided into halves and each half into fifths, and this process described.

Have the children divide their circles first into halves, then into fifths, and find the number of tenths in 1 and 2 halves, and in 1, 2, 3, 4, and 5 fifths.

Call attention to the fact that 1 circle, $\frac{2}{2}$, and $\frac{10}{10}$, are equivalent. Also $\frac{1}{2}$ and $\frac{5}{10}$.

Have circles formed and tenths taken away consecutively. Have the children find what must be added to 1, 2, 3, 4, etc., tenths to complete the circle.

Have halves and fifths also taken away from the circle, and children find how many tenths will be left each time. Have them also find how many tenths must be added to $\frac{1}{2}$ and 1, 2, 3, and 4 fifths to complete the circle.

Have them find how many times $\frac{1}{10}$ must be taken to make 1 and 2 halves; 1, 2, 3, 4, and 5 fifths; and 1, 2, 3, 4, 5, etc., tenths. Also into how many equal parts each of these fractions must be divided to get $\frac{1}{10}$.

Addition and subtraction examples to be worked out under teacher's direction.

SEVENTHS.

Circles to be cut by the children into sevenths; parts counted and name *one-seventh* given.

Have circles formed and sevenths taken away consecutively. Children to find how many sevenths must be added to 1, 2, 3, 4, 5, and 6 sevenths to complete the circle.

Children to find the number of times $\frac{1}{7}$ must be taken to make 2, 3, 4, 5, 6, and 7 sevenths.

Also into how many equal parts each of the fractions must be divided to get $\frac{1}{7}$.

Questions in addition and subtraction to be worked out by children.

ELEVENTHS.

Circles to be cut into eleven equal parts by the children; these to be counted and formed into circles. Give name *one-eleventh*, and write it in words and figures. Elevenths to be taken away from the circle consecutively, and children find the number of elevenths that will be left each time.

Also the number of elevenths that must be added to 1, 2, 3, 4, etc., elevenths to complete the circle. Children to find how many times $\frac{1}{11}$ must be taken to make 2, 3, 4, 5, 6, 7, etc., elevenths; and into how many equal parts each of these fractions must be divided to get $\frac{1}{11}$. Questions in addition and subtraction to be worked out under the direction of the teacher.

FRACTIONAL PARTS OF NUMBERS.

HALVES.

Each child to have 12 circles, each divided by a line drawn through the middle. These circles are to be cut into halves, the children finding the number of halves in them as they are cut; *e.g.*

In 1 circle there are $\frac{2}{2}$.
In 2 circles there are $\frac{4}{2}$.
3 circles $=\frac{6}{2}$.
4 circles $=\frac{8}{2}$.
5 circles $=\frac{10}{2}$, etc.

Have the fractions changed to whole numbers by placing the halves together; *e.g.* $\frac{2}{2}=1$, $\frac{4}{2}=2$, $\frac{6}{2}=3$, etc.

Have $\frac{1}{2}$ circle placed with 1 circle, and have the number of halves found in $1\frac{1}{2}$ circles. By adding a circle each time, the children can find the number of halves in $2\frac{1}{2}$, $3\frac{1}{2}$, $4\frac{1}{2}$, $5\frac{1}{2}$, etc., circles.

Have these fractions changed to mixed numbers by putting the halves together:

$\frac{3}{2}=$, $\frac{5}{2}=$, $\frac{7}{2}=$, $\frac{9}{2}=$, etc.

Have the children place their halves together so as to form 12 circles, and have $\frac{1}{2}$ of each taken away; *e.g.*

$\frac{1}{2}$ of $1=\frac{1}{2}$, $\frac{1}{2}$ of $2=\frac{2}{2}$, $\frac{1}{2}$ of $3=\frac{3}{2}$, $\frac{1}{2}$ of $4=\frac{4}{2}$, etc.

When they have taken away $\frac{1}{2}$ of 12 circles, they are ready to make the induction that $\frac{1}{2}$ of $13=\frac{13}{2}$, $\frac{1}{2}$ of $14=\frac{14}{2}$, or $\frac{1}{2}$ of $24=\frac{24}{2}$.

Next have children tell or find what $\frac{1}{2}$ of these numbers is equal to; *e.g.* $\frac{1}{2}$ of $2=1$, $\frac{1}{2}$ of $3=1\frac{1}{2}$, $\frac{1}{2}$ of $4=2$, $\frac{1}{2}$ of $5=2\frac{1}{2}$, $\frac{1}{2}$ of $24=12$.

Have 2 circles formed, and have the children take away $\frac{1}{2}$ of them and make the $\frac{2}{2}$ into a circle.

Have the other half of the 2 circles taken away, and they will see that they have taken away $\frac{2}{2}$ of 2 circles, or the whole, and that nothing is left. Also, that

$\frac{1}{2}$ of 2 circles $=1$ circle; and
$\frac{2}{2}$ of 2 circles $=2$ circles, or the whole.

By using circles have them find $\frac{1}{2}$ and $\frac{2}{2}$ of 4, 6, 8, 10, and 12 circles in the same way.

Without using circles have them find 1 and 2 halves of the remaining multiples of 2 as far as 24, first finding $\frac{1}{2}$, then $\frac{2}{2}$.

They should know $\frac{2}{2}$ of 1, 3, 5, 7, 9, or any number, as they know that $\frac{2}{2}$ of anything is the whole of it.

FOURTHS.

The children having cut their circles into halves, direct them to cut each half into halves. Have the fourths formed into circles, the children finding the number there are in 1, 2, 3, 4, 5, etc., circles.

Next have them find the number of circles to which $\frac{4}{4}$, $\frac{8}{4}$, $\frac{12}{4}$, etc., are equal.

Have $\frac{1}{4}$ added to the circles as $1\frac{1}{4}=\frac{5}{4}$, $2\frac{1}{4}=\frac{9}{4}$, $3\frac{1}{4}$, etc.

By putting fourths together, have fractions changed to mixed numbers; *e.g.* $\frac{5}{4}=1\frac{1}{4}$, $\frac{9}{4}=2\frac{1}{4}$, etc.

Have $\frac{1}{2}$ added to the circles, and the number of fourths found in $2\frac{1}{2}$, $3\frac{1}{2}$, $4\frac{1}{2}$, etc.

By putting fourths together again, have fractions changed to mixed numbers; *e.g.* $\frac{6}{4}=1\frac{1}{2}$, $\frac{10}{4}=2\frac{1}{2}$, etc.

Continue same process, only adding this time $\frac{3}{4}$ to the circles; *e.g.* $1\frac{3}{4}=\frac{7}{4}$, $2\frac{3}{4}=\frac{11}{4}$, and $\frac{7}{4}=1\frac{3}{4}$, $\frac{11}{4}=2\frac{3}{4}$, etc.

Have children form their 12 circles, and take away $\frac{1}{4}$ from each; *e.g.* $\frac{1}{4}$ of $1=\frac{1}{4}$, $\frac{1}{4}$ of $2=\frac{2}{4}$, $\frac{1}{4}$ of $3=\frac{3}{4}$, $\frac{1}{4}$ of $4=\frac{4}{4}$, $\frac{1}{4}$ of $5=\frac{5}{4}$, etc.

Continue questions to $\frac{1}{4}$ of 48.

Next have children tell what $\frac{1}{4}$ of these numbers is equal to; *e.g.* $\frac{1}{4}$ of $2=\frac{1}{2}$, $\frac{1}{4}$ of $3=\frac{3}{4}$, $\frac{1}{4}$ of $4=1$, $\frac{1}{4}$ of $6=1\frac{1}{2}$, etc.

Have children put together 4 circles, take away $\frac{1}{4}$ of each, and place the fourths in the form of a circle. $\frac{1}{4}$ of $4=\frac{4}{4}=1$.

Have them take away another fourth, making this also into a circle. They have now taken away $\frac{2}{4}$ of 4 circles, or 2 circles.

Have the third fourth taken away and formed as before. $\frac{3}{4}$ of 4 circles, or 3 circles, have been taken away, and $\frac{1}{4}$ of 4 circles remains. Have this also taken away and made into a circle.

Have them notice that $\frac{4}{4}$, or the whole of the four circles were taken away, and nothing left. Have them cover up or take away $\frac{1}{4}$ (1 circle), $\frac{2}{4}$ or $\frac{1}{2}$ (2 circles), $\frac{3}{4}$ and $\frac{4}{4}$, and find what will be left each time.

Make up various examples and have the children use their circles in working them out; *e.g.*

John had 4 pears. If he gave away $\frac{1}{4}$ of them, how many had he left?

Lucy had 4 sharp pencils, but she fell down and broke the points of two-fourths of them. How many points did she break? How many sharp pencils had she left?

Frank had 4 roses, and gave his mother $\frac{4}{4}$ of them. How many roses did he give her?

Cora has 4 pinks, $\frac{3}{4}$ of them are white. How many are white?

Have children put together 8 circles, and take away successively 1, 2, 3, and 4 fourths, making the fourths into circles each time.

After the circles are formed have $\frac{1}{4}$ (or two circles), $\frac{2}{4}$ or $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{4}{4}$ taken away, the children finding each time the number of circles that will be left. Also make up examples, having the children use their circles in working them out. The children should notice that $\frac{2}{4}$ are twice $\frac{1}{4}$, $\frac{3}{4}$ three times $\frac{1}{4}$, and $\frac{4}{4}$ four times $\frac{1}{4}$, or the whole.

Have children form their fourths into 12 circles. Ask some child to tell what $\frac{1}{4}$ of 12 circles is equal to. Have them take away three circles. Have another fourth taken away. Then another, and $\frac{1}{4}$ will be left and the 12 circles will have been divided into fourths. The teacher should make up examples, and children work them out with their circles. Without using circles have children find 1, 2, 3, and 4 fourths of the remaining multiples of 4 as far as 48. The children having learned what $\frac{1}{4}$ of these numbers is, they know that $\frac{1}{4}$ must be taken twice to get $\frac{2}{4}$ or $\frac{1}{2}$, three times to get $\frac{3}{4}$, and four times to get $\frac{4}{4}$, or the whole.

They should be able to tell $\frac{4}{4}$ of any number as they have been taught that $\frac{4}{4}$ is the whole of anything. Have children find the whole number when $\frac{1}{4}$ is given.

Note. — The children very soon learn that in getting 1, 2, or 3 fourths of any number of objects, that it is not necessary to divide each individual object into fourths, but only to get what $\frac{1}{4}$ of the whole number is equal to, and take that the number of times required by the fraction.

EIGHTHS.

The children having cut their 12 circles into fourths, direct them to cut each fourth into halves.

Have children find the number of eighths in 1, 2, 3, 4, 5, etc., circles.

Then the number of circles to which $\frac{8}{8}$, $\frac{16}{8}$, $\frac{24}{8}$, etc., are equal.

Have $\frac{1}{8}$ added to the circles, *e.g.* $1\frac{1}{8} =$; $2\frac{1}{8} =$; $3\frac{1}{8} =$, etc.

Have fractions changed to mixed numbers, *e.g.* $\frac{9}{8}=$; $\frac{17}{8}=$; $\frac{25}{8}=$, etc.

Have $\frac{1}{4}$ added to the circles — the answers to be given in eighths, *e.g.* $1\frac{1}{4}=\frac{10}{8}$; $2\frac{1}{4}=\frac{18}{8}$; $3\frac{1}{4}=\frac{26}{8}$, etc.

Then have $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and $\frac{7}{8}$ added to the circles, having the fractions changed to mixed numbers each time; *e.g.*

$1\frac{3}{8}=\frac{11}{8}$; $2\frac{3}{8}=\frac{19}{8}$, etc. $\frac{11}{8}=1\frac{3}{8}$; $\frac{19}{8}=2\frac{3}{8}$, etc.
$1\frac{1}{2}=\frac{12}{8}$; $2\frac{1}{2}=\frac{20}{8}$; $3\frac{1}{2}=\frac{28}{8}$, etc. $\frac{12}{8}=1\frac{1}{2}$; $\frac{20}{8}=2\frac{1}{2}$, etc.
$1\frac{5}{8}=\frac{13}{8}$; $2\frac{5}{8}=\frac{21}{8}$, etc. $\frac{13}{8}=1\frac{5}{8}$; $\frac{21}{8}=2\frac{5}{8}$, etc.
$1\frac{3}{4}=\frac{14}{8}$; $2\frac{3}{4}=\frac{22}{8}$, etc. $\frac{14}{8}=1\frac{3}{4}$; $\frac{22}{8}=2\frac{3}{4}$, etc.
$1\frac{7}{8}=\frac{15}{8}$; $2\frac{7}{8}=\frac{23}{8}$, etc. $\frac{15}{8}=1\frac{7}{8}$; $\frac{23}{8}=2\frac{7}{8}$, etc.

Have the 12 circles formed and $\frac{1}{8}$ taken from each; continue questions as far as $\frac{1}{8}$ of 96.

Then have children tell what $\frac{1}{8}$ of these numbers is equal to.

Have 8 circles formed and children find 1, 2, 3, 4, 5, 6, 7, and 8 eighths by taking the eighths away successively and forming them into circles.

After these are formed have children work out examples given by the teacher. Have them notice that to get $\frac{1}{4}$ or $\frac{2}{8}$ they take $\frac{1}{8}$ twice, 3 times to get $\frac{3}{8}$, 4 times to get $\frac{4}{8}$ or $\frac{1}{2}$, 5 times to get $\frac{5}{8}$, 6 times to get $\frac{6}{8}$ or $\frac{3}{4}$, 7 times to get $\frac{7}{8}$, and 8 times to get $\frac{8}{8}$ or the whole.

Have children find 1, 2, 3, 4, 5, 6, 7, and 8 eighths of the remaining multiples of 8 as far as 96, without using circles, having them find first $\frac{1}{8}$ and taking that the number of times required by the fraction.

Have children find the whole number when $\frac{1}{8}$ is given.

THIRDS.

Each child being given 12 circles divided by lines into 12 equal parts, direct children to cut through the heavy lines which will divide the circles into thirds.

Have the thirds placed together to form circles, and children find the number of thirds in 1, 2, 3, 4, 5, 6, etc., circles. Also the number of circles to which $\frac{3}{3}$, $\frac{6}{3}$, $\frac{9}{3}$, $\frac{12}{3}$, etc., are equal.

Have children add $\frac{1}{3}$, then $\frac{2}{3}$ to their circles, and find the number of thirds in $1\frac{1}{3}$; $2\frac{1}{3}$; $3\frac{1}{3}$, etc. $1\frac{2}{3}$; $2\frac{2}{3}$; $3\frac{2}{3}$; $4\frac{2}{3}$, etc. Have the fractions changed back to mixed numbers each time; *e.g.* $\frac{4}{3}=1\frac{1}{3}$; $\frac{7}{3}=2\frac{1}{3}$, etc. $\frac{5}{3}=1\frac{2}{3}$; $\frac{8}{3}=2\frac{2}{3}$; $\frac{11}{3}=3\frac{2}{3}$, etc.

Have children form their 12 circles, and then take away $\frac{1}{3}$ from each. $\frac{1}{3}$ of $1=\frac{1}{3}$; $\frac{1}{3}$ of $2=\frac{2}{3}$; $\frac{1}{3}$ of $3=\frac{3}{3}$, etc.

Continue the questions as far as $\frac{1}{3}$ of 36.

Next have them tell what $\frac{1}{3}$ of these numbers is equal to; *e.g.* $\frac{1}{3}$ of $3=1$; $\frac{1}{3}$ of $5=1\frac{2}{3}$; $\frac{1}{3}$ of $9=3$, etc.

Using their circles have children find 1, 2, and 3 thirds of 3, 6, 9, and 12. In each case after the thirds have been taken away and formed into circles, examples should be given by the teacher and worked out by the children.

Without using their circles have them find 1, 2, and 3 thirds of the remaining multiples of 3 as far as 36, finding $\frac{1}{3}$ first each time.

The children should know $\frac{3}{3}$ of any number, knowing $\frac{3}{3}$ to be the whole of anything.

Have them find the whole number when $\frac{1}{3}$ is given; *e.g.* 7 apples are $\frac{1}{3}$ of how many apples?

SIXTHS.

The children having cut their circles into thirds, direct them to cut each third into halves, and their circles will then be in sixths.

Have sixths formed into circles, and children find the number of sixths in 1, 2, 3, 4, etc., circles.

Have fractions changed back to whole numbers. Proceed the same as with previous fractions by having children add first

$\frac{1}{6}$; then $\frac{2}{6}$ or $\frac{1}{3}$; $\frac{3}{6}$ or $\frac{1}{2}$; then $\frac{4}{6}$ or $\frac{2}{3}$, and lastly $\frac{5}{6}$ to the circles, giving the answers in sixths; *e.g.*

$1\frac{1}{6}=\frac{7}{6}$; $2\frac{1}{6}=\frac{13}{6}$; $3\frac{1}{6}=\frac{19}{6}$, etc. $1\frac{1}{3}=\frac{8}{6}$; $2\frac{1}{3}=\frac{14}{6}$; $3\frac{1}{3}=\frac{20}{6}$, etc.
$1\frac{1}{2}=\frac{9}{6}$; $2\frac{1}{2}=\frac{15}{6}$; $3\frac{1}{2}=\frac{21}{6}$, etc. $1\frac{2}{3}=\frac{10}{6}$; $2\frac{2}{3}=\frac{16}{6}$, etc.
$1\frac{5}{6}=\frac{11}{6}$; $2\frac{5}{6}=\frac{17}{6}$, etc.

Have the fractions changed back to mixed numbers each time; *e.g.*

$\frac{7}{6}=1\frac{1}{6}$; $\frac{13}{6}=2\frac{1}{6}$, etc.
$\frac{8}{6}=1\frac{1}{3}$; $\frac{14}{6}=2\frac{1}{3}$, etc.
$\frac{9}{6}=1\frac{1}{2}$; $\frac{15}{6}=2\frac{1}{2}$, etc.

Have the children form their 12 circles, and have them take away $\frac{1}{6}$ of each. $\frac{1}{6}$ of $1=\frac{1}{6}$; $\frac{1}{6}$ of $2=\frac{2}{6}$; $\frac{1}{6}$ of $3=\frac{3}{6}$, etc.

Continue questions as far as $\frac{1}{6}$ of 72.

Next have children tell what $\frac{1}{6}$ of these numbers is equal to; *e.g.* $\frac{1}{6}$ of $6=1$; $\frac{1}{6}$ of $9=1\frac{1}{2}$; $\frac{1}{6}$ of $20=3\frac{1}{3}$, etc.

Using their circles have them find 1, 2, 3, 4, 5, and 6 sixths of 6 and 12.

Without using circles have them find the sixths of the remaining multiples of 6 as far as 72; find $\frac{1}{6}$ first each time.

Have the whole number found when $\frac{1}{6}$ is given.

TWELFTHS.

The children having cut their circles into sixths, direct them to cut each sixth into halves, thus dividing the circles into twelfths. Proceed with twelfths the same as with sixths, having children first find the twelfths in 1, 2, 3, etc., circles, then add successively $\frac{1}{12}$; $\frac{2}{12}$ or $\frac{1}{6}$; $\frac{3}{12}$ or $\frac{1}{4}$; $\frac{4}{12}$ or $\frac{1}{3}$; $\frac{5}{12}$; $\frac{6}{12}$ or $\frac{1}{2}$; $\frac{7}{12}$; $\frac{8}{12}$ or $\frac{2}{3}$; $\frac{9}{12}$ or $\frac{3}{4}$; $\frac{10}{12}$ or $\frac{5}{6}$, and $\frac{11}{12}$, to the circles. The answers to be given in twelfths.

Have the fractions changed back to mixed numbers after each step.

Have the 12 circles formed, and children take away $\frac{1}{12}$ from each. $\frac{1}{12}$ of $1=\frac{1}{12}$; $\frac{1}{12}$ of $2=\frac{2}{12}$; $\frac{1}{12}$ of $3=\frac{3}{12}$, etc.

Continue the questions as far as $\frac{1}{12}$ of 144.

Then have children tell what $\frac{1}{12}$ of each of these numbers is equal to; *e.g.* $\frac{1}{12}$ of $8=\frac{2}{3}$; $\frac{1}{12}$ of $14=1\frac{1}{6}$; $\frac{1}{12}$ of $21=1\frac{3}{4}$; $\frac{1}{12}$ of $30=2\frac{1}{2}$, etc.

Using their circles have children find the twelfths of 12,—and without circles the twelfths of the multiples of twelve as far as 144,—finding first $\frac{1}{12}$ each time, and taking that as many times as required by the fraction.

Have children find the whole number, $\frac{1}{12}$ being given.

NINTHS.

The children being given each 12 circles divided by lines into ninths, direct them to cut through the heavy lines first, thus dividing the circles into thirds. Then each third into thirds and the circles will be in ninths.

Have circles formed and children find the number of ninths in them successively. Then the number of circles to which the ninths are equal.

Have children add successively to the circles $\frac{1}{9}$, $\frac{2}{9}$, $\frac{3}{9}$ or $\frac{1}{3}$, $\frac{4}{9}$, $\frac{5}{9}$, $\frac{6}{9}$ or $\frac{2}{3}$, $\frac{7}{9}$, and $\frac{8}{9}$. Have the fractions changed back to mixed numbers after each step.

Have 12 circles formed and $\frac{1}{9}$ taken away from each; *e.g.* $\frac{1}{9}$ of $1=\frac{1}{9}$; $\frac{1}{9}$ of $2=\frac{2}{9}$; $\frac{1}{9}$ of $3=\frac{3}{9}$, etc.

Continue questions as far as $\frac{1}{9}$ of 108.

Have children tell what $\frac{1}{9}$ of each of these numbers is equal to. $\frac{1}{9}$ of $3=\frac{1}{3}$; $\frac{1}{9}$ of $6=\frac{2}{3}$; $\frac{1}{9}$ of $11=1\frac{2}{9}$; $\frac{1}{9}$ of $48=5\frac{1}{3}$.

Using objects, have children find the ninths of 9, and without circles the ninths of the multiples of 9 as far as 108.

Have them find the whole number when $\frac{1}{9}$ is given.

FIFTHS.

Each child having 12 circles divided by lines into 5 equal parts, direct children to cut through the lines, thus dividing the circles into fifths.

Have the circles formed and children find the number of fifths in 1, 2, 3, etc., circles.

Then the number of circles to which $\frac{5}{5}$, $\frac{10}{5}$, $\frac{15}{5}$, $\frac{20}{5}$, etc., are equal.

Have children add successively 1, 2, 3, and 4 fifths to the circles, and have the fractions changed back to mixed numbers after each step; *e.g.*

$1\frac{1}{5}=?$ $2\frac{1}{5}=$ $3\frac{1}{5}=$, etc. $1\frac{2}{5}=$ $2\frac{2}{5}=$ $3\frac{2}{5}=$, etc.
$\frac{6}{5}=$ $\frac{11}{5}=$ $\frac{16}{5}=$, etc. $\frac{7}{5}=$ $\frac{12}{5}=$ $\frac{17}{5}=$, etc.

Have circles formed and children take away $\frac{1}{5}$ from each; continue questions as far as $\frac{1}{5}$ of 60.

Next have children tell what $\frac{1}{5}$ of each of these numbers is equal to.

Using circles, have children find 1, 2, 3, 4, and 5 fifths of five and ten; and without using circles find the fifths of the remaining multiples of five as far as 60. Have $\frac{1}{5}$ found first, and that taken the number of times required by the fraction.

Have the whole number found when $\frac{1}{5}$ of it is given.

TENTHS.

Children having cut their circles into fifths, direct them to cut each fifth into halves, thus dividing the circles into tenths.

Have the tenths formed into circles, and children find the tenths in 1, 2, 3, 4, 5, etc., circles.

Have the fractions changed back to whole numbers.

Have children add successively to the circles $\frac{1}{10}$, $\frac{2}{10}$ or $\frac{1}{5}$, $\frac{3}{10}$, $\frac{4}{10}$ or $\frac{2}{5}$, $\frac{5}{10}$ or $\frac{1}{2}$, $\frac{6}{10}$ or $\frac{3}{5}$, $\frac{7}{10}$, $\frac{8}{10}$ or $\frac{4}{5}$, and $\frac{9}{10}$. The answers to be given in tenths.

Have the fractions changed back to mixed numbers after each step; *e.g.*

$1\frac{1}{10}=\frac{11}{10}$, $2\frac{1}{10}=$, $3\frac{1}{10}=$, $4\frac{1}{10}=$,
$\frac{11}{10}=$, $\frac{21}{10}=$, $\frac{31}{10}=$, $\frac{41}{10}=$,

$1\frac{1}{5}=\frac{12}{10}=$, $2\frac{1}{5}=\frac{22}{10}$, $3\frac{1}{5}=\frac{32}{10}$,
$\frac{12}{10}=1\frac{1}{5}$, $\frac{22}{10}=2\frac{1}{5}$, $\frac{32}{10}=3\frac{1}{5}$, etc.

Have 12 circles formed and $\frac{1}{10}$ taken from each. Continue questions as far as $\frac{1}{10}$ of 120. Next have children tell what $\frac{1}{10}$ of each of these numbers is equal to.

By using circles have children find the tenths of 10, and without using circles have them find the tenths of the remaining multiples of ten as far as 120.

Have children find the whole number, when $\frac{1}{10}$ of it is given.

SEVENTHS.

Each of the children having 12 circles, direct them to cut these into sevenths. By forming the sevenths into circles the children can find the number of sevenths in 1, 2, 3, 4, 5, 6, etc., circles. Have the fractions changed back to whole numbers.

Have children add successively to their circles 1, 2, 3, 4, 5, and 6 sevenths.

Have the fractions changed back to mixed numbers after each step.

Have children form their 12 circles and take away $\frac{1}{7}$ from each. Continue questions as far as $\frac{1}{7}$ of 84. Have children next tell what $\frac{1}{7}$ of each of these numbers is equal to.

Have 1, 2, 3, 4, 5, 6, and 7 sevenths of the multiples of seven found as far as 84.

When $\frac{1}{7}$ is given, have children find the whole number.

ELEVENTHS.

Give each child 12 circles marked by lines into eleven equal parts, and direct children to cut these into elevenths.

Have the number of elevenths found in 1, 2, 3, 4, etc., circles.

Have the number of circles found to which $\frac{11}{11}$, $\frac{22}{11}$, $\frac{33}{11}$, $\frac{44}{11}$, etc., are equal.

Have 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 elevenths added successively to the circles.

Have the fractions changed back to mixed numbers after each step.

Have 12 circles formed, and $\frac{1}{11}$ taken from each. $\frac{1}{11}$ of $1=\frac{1}{11}$, $\frac{1}{11}$ of $2=\frac{2}{11}$, $\frac{1}{11}$ of $3=\frac{3}{11}$, etc. Continue questions as far as $\frac{1}{11}$ of 132.

Have children tell what $\frac{1}{11}$ of these numbers is equal to.

Have 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11 elevenths found of the multiples of 11 as far as 132; children finding $\frac{1}{11}$ first, and taking that the number of times required by the fraction.

Have the whole number found when $\frac{1}{11}$ is given.

PART II.

PUPILS' EDITION.

PRACTICAL LESSONS IN FRACTIONS.

PART II.—PUPILS' EDITION.

FRACTIONAL PARTS OF THE UNIT.

HALVES.

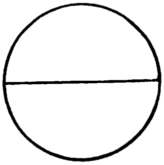
$1=\frac{?}{2}$

$\frac{2}{2}=?$

$\frac{1}{2}+\frac{1}{2}=$

$1-\frac{1}{2}=$

$1-\frac{2}{2}=$



$\frac{1}{2}-\frac{1}{2}=$

$\frac{1}{2}\times 2=$

$\frac{2}{2}\div 2=$

$\frac{2}{2}\div ?=\frac{1}{2}$

$\frac{1}{2}+?=1$

1. If Kate had an orange and divided it equally between her 2 brothers, what part of an orange would each boy have?

2. John had a peach and ate $\frac{1}{2}$ of it. What part of the peach had he left?

3. If Lucy had an apple, to how many children could she give a half apple?

4. Frank had some candy given to him on his birthday. If he ate $\frac{1}{2}$ of it each day, how many days did his candy last?

5. Alice picked a quart of berries, and Willie $\frac{1}{2}$ a quart. How much more did Alice pick than Willie?

6. Clara has two half dollars. To how many dollars is her money equal? If she spends $\frac{1}{2}$ of her money, what part of it will she have left?

7. Mr. Lee sold $\frac{1}{2}$ of his sheep to Mr. Jones and the remainder to Mr. Smith. What part did he sell to Mr. Smith?

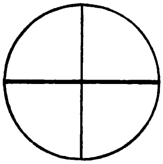
8. John picked a quart of cherries. If he gave Sarah $\frac{1}{2}$ of them, and ate $\frac{1}{2}$ himself, what had he left?

9. If Bertha gives $\frac{1}{2}$ of her apple to Dorothy, and $\frac{1}{2}$ to Edith, what part of her apple does she give away?

10. How long will it take Edmund to earn a dollar, if he earns one-half dollar a day?

11. Which would you rather have, one dollar, or two half dollars?

FOURTHS.



$1=\frac{?}{4}$

$\frac{1}{2}=\frac{?}{4}$

$\frac{2}{2}=\frac{?}{4}$

$1-\frac{1}{2}=\frac{?}{4}$

$\frac{1}{2}+\frac{?}{4}=1$

$1-\frac{1}{4}=$

$1-\frac{2}{4}=$

$1-\frac{3}{4}=$

$1-\frac{4}{4}=$

$\frac{1}{4}+?=1$

$\frac{2}{4}+?=1$

$\frac{3}{4}+?=1$

$\frac{1}{4}+\frac{1}{4}=$

$\frac{1}{4}\times 2=$

$\frac{2}{4}\div 2=$

$\frac{2}{4}\div ?=\frac{1}{4}$

$\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=$

$\frac{1}{4}\times 3=$

$\frac{3}{4}\div 3=$

$\frac{3}{4}\div ?=\frac{1}{4}$

$\frac{1}{4}+\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=$

$\frac{1}{4}\times 4=$

$\frac{4}{4}\div 4=$

$\frac{4}{4}\div ?=\frac{1}{4}$

$\frac{1}{2}\div 2=$

$\frac{1}{2}\div ?=\frac{1}{4}$

$\frac{1}{2}+\frac{1}{4}=$

$\frac{1}{4}+\frac{1}{2}=$

$\frac{1}{4}+\frac{3}{4}=$

$\frac{3}{4}-\frac{1}{2}=$

$\frac{3}{4}-\frac{1}{4}=$

$\frac{1}{2}-\frac{1}{4}=$

$\frac{1}{4}-\frac{1}{4}=$

$\frac{1}{2}+?=\frac{3}{4}$

$\frac{1}{4}+?=\frac{3}{4}$

$\frac{1}{4}+?=\frac{1}{2}$

$\frac{3}{4}-?=\frac{1}{2}$

$\frac{3}{4}-?=\frac{1}{4}$

$\frac{1}{2}-?=\frac{1}{4}$

$\frac{1}{2}-\frac{?}{4}=0$

1. How would you cut an apple into fourths?

2. If Mary divided an apple equally among 4 girls, what part of the apple would each girl have?

3. If John eats $\frac{1}{4}$ of his candy each day, how many days will it last?

4. Carrie has spent $\frac{1}{4}$ of her money. What part of it has she left?

5. Mrs. Brown divided $\frac{3}{4}$ of a pie equally among 3 boys. What part of the pie did she give to each?

6. How could I get $\frac{1}{4}$ of a melon, if I had $\frac{1}{2}$ of one?

7. Jack sold all but $\frac{1}{4}$ of his papers. What part did he sell?

8. Jane's father gave her 1 dollar and told her to keep $\frac{1}{2}$ of it herself, and divide the remainder equally between her two brothers. What part of the dollar should she give to each?

9. Which would you rather have, $\frac{1}{2}$ or $\frac{2}{4}$ of a pie?

10. Arthur wishes to earn a dollar. He earned $\frac{1}{4}$ of a dollar on Monday, and $\frac{1}{2}$ of one on Tuesday. What part has he yet to earn?

11. Mr. Smith sold $\frac{1}{2}$ of his sheep to Mr. Brown, $\frac{1}{4}$ to Mr. Jones, and kept the remainder himself. What part of his sheep did he sell? What part did he keep for himself?

12. Lucy picked a quart of berries. She gave $\frac{1}{2}$ of them to Ella, and $\frac{2}{4}$ to May. What did she have left?

13. Ella saved 1 quarter of a dollar each week for 3 weeks. What part of a dollar did she save? How many more quarters must she save to have a dollar?

14. How many slates at a quarter of a dollar each can Cora buy with 1 dollar?

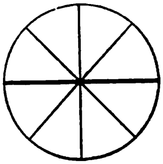
15. If Fannie had $\frac{1}{2}$ of a peach, into how many equal parts must she cut it to get $\frac{1}{4}$ of a peach? How should she cut $\frac{2}{4}$ of a pear to get $\frac{1}{4}$?

EIGHTHS.

$1=\frac{?}{8}$
$\frac{1}{2}=\frac{?}{8}$
$\frac{2}{2}=\frac{?}{8}$
$\frac{1}{4}=\frac{?}{8}$
$\frac{2}{4}=\frac{?}{8}$
$\frac{3}{4}=\frac{?}{8}$
$\frac{4}{4}=\frac{?}{8}$
$1-\frac{1}{8}=$
$1-\frac{2}{8}=$
$1-\frac{3}{8}=$
$1-\frac{4}{8}=$
$1-\frac{5}{8}=$
$1-\frac{6}{8}=$
$1-\frac{7}{8}=$
$1-\frac{8}{8}=$
$\frac{1}{8}+?=1$
$\frac{2}{8}+?=1$
$\frac{3}{8}+?=1$
$\frac{4}{8}+?=1$
$\frac{5}{8}+?=1$
$\frac{6}{8}+?=1$
$\frac{7}{8}+?=1$
$\frac{8}{8}+?=1$

$1-\frac{1}{2}=\frac{?}{8}$
$1-\frac{2}{2}=$
$1-\frac{1}{4}=\frac{?}{8}$
$1-\frac{2}{4}=\frac{?}{8}$
$1-\frac{3}{4}=\frac{?}{8}$
$1-\frac{4}{4}=$
$\frac{1}{4}+\frac{?}{8}=1$
$\frac{2}{4}+\frac{?}{8}=1$
$\frac{3}{4}+\frac{?}{8}=1$
$\frac{4}{4}+?=1$
$\frac{1}{4}+\frac{1}{4}=\frac{?}{8}$
$\frac{1}{2}+\frac{1}{4}=\frac{?}{8}$
$\frac{3}{4}+\frac{1}{4}=\frac{?}{8}$
$\frac{1}{4}+\frac{1}{8}=$
$\frac{1}{2}+\frac{1}{8}=$
$\frac{3}{4}+\frac{1}{8}=$
$\frac{3}{8}+\frac{5}{8}=$
$\frac{2}{8}+\frac{3}{8}=$
$\frac{3}{8}+\frac{2}{8}=$
$\frac{2}{8}+\frac{1}{8}=$
$\frac{2}{8}+\frac{5}{8}=$
$\frac{6}{8}+\frac{1}{8}=$
$\frac{3}{4}-\frac{1}{2}=\frac{?}{8}$

$\frac{1}{2}-\frac{1}{4}=\frac{?}{8}$ $\frac{1}{4}-\frac{1}{4}=$



$\frac{1}{4}-\frac{1}{8}=$
$\frac{3}{4}-\frac{5}{8}=$
$\frac{5}{8}-\frac{1}{4}=$
$\frac{7}{8}-\frac{5}{8}=$
$\frac{7}{8}-\frac{1}{2}=$
$\frac{1}{8}+\frac{1}{8}=$
$(\frac{1}{8}\times 2=$ $\frac{2}{8}\div 2=$ $\frac{2}{8}\div ?=\frac{1}{8})$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$(\frac{1}{8}\times 3=$ $\frac{3}{8}\div 3=$ $\frac{3}{8}\div ?=\frac{1}{8})$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$(\frac{1}{8}\times 4=$ $\frac{4}{8}\div 4=$ $\frac{4}{8}\div ?=\frac{1}{8})$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$(\frac{1}{8}\times 5=$ $\frac{5}{8}\div 5=$ $\frac{5}{8}\div ?=\frac{1}{8})$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$\frac{1}{8}\times 6=$ $\frac{6}{8}\div 6=$ $\frac{6}{8}\div ?=\frac{1}{8}$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$\frac{1}{8}\times 7=$ $\frac{7}{8}\div 7=$ $\frac{7}{8}\div ?=\frac{1}{8}$
$\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}+\frac{1}{8}=$
$\frac{1}{8}\times 8=$ $\frac{8}{8}\div 8=$ $\frac{8}{8}\div ?=\frac{1}{8}$
$\frac{1}{4}\div 2=$ $\frac{1}{4}\div ?=\frac{1}{8}$
$\frac{1}{2}\div 4=$ $\frac{1}{2}\div ?=\frac{1}{8}$
$\frac{3}{4}\div 6=$ $\frac{3}{4}\div ?=\frac{1}{8}$

1. Fred divided a peach into eighths. How many equal pieces had he? Tell me how he could cut it to get it into eighths. He gave Mary $\frac{5}{8}$ of his peach and the remainder to Lucy. What part did he give to Lucy?

2. John travelled $\frac{1}{2}$ of the distance home in a boat; $\frac{3}{8}$ in the cars, and walked the remainder. What part of the distance did he walk?

3. If I have $\frac{1}{2}$ of a peach, how shall I cut it to get $\frac{1}{8}$ of a peach?

4. Mrs. Brown had $\frac{6}{8}$ of a pie, which she divided equally among her 3 children. What part of the pie did she give to each?

5. If William earns $\frac{2}{8}$ of a dollar a day, how many days will it take him to earn a dollar? To earn $\frac{1}{2}$ of a dollar?

6. Carl earned $\frac{3}{4}$ of a dollar, and Edward earned $\frac{4}{8}$ of one. Which earned the more? What part of a dollar did Carl earn more than Edward?

7. If I have $\frac{3}{4}$ of a melon, to how many children can I give $\frac{1}{8}$ of a melon?

8. Which would you rather have, $\frac{2}{4}$, $\frac{4}{8}$, or $\frac{1}{2}$ of a pie?

9. Julia spelled $\frac{7}{8}$ of her words right. What part did she spell wrong?

10. If Lewis has learned $\frac{5}{8}$ of his lesson, what part has he yet to learn?

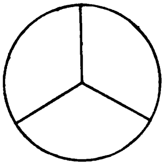
11. Mrs. Lee had a loaf of cake. She gave $\frac{3}{8}$ of it to Mary, $\frac{1}{4}$ to Kate, $\frac{2}{8}$ to Cora, and the remainder to Willie. What part of the cake did Willie get?

12. If I have $\frac{1}{2}$ and $\frac{1}{4}$ of a melon, how many eighths have I?

13. If James has $\frac{7}{8}$ of an apple, to how many boys can he give $\frac{1}{8}$?

14. Edith had $\frac{1}{2}$ of a dollar, and her mother gave her a quarter. If she spends $\frac{2}{8}$ of a dollar for a slate, and $\frac{2}{8}$ for a book, what part of a dollar will she have left?

THIRDS.



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$\frac{3}{3}\div 3=$

$\frac{3}{3}\div ?=\frac{1}{3}$

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$\frac{1}{3}+?=\frac{2}{3}$

$\frac{2}{3}-\frac{1}{3}=$

$\frac{2}{3}-\frac{2}{3}=$

$\frac{2}{3}-?=\frac{1}{3}$

$\frac{2}{3}-?=0$

1. Elsie does $\frac{1}{3}$ of her practising in the morning, $\frac{1}{3}$ in the afternoon, and the remainder in the evening. What part does she do in the evening?

2. Mr. Brown divided some grapes equally among 3 boys. What part of the grapes did he give to each?

3. If Lester lost $\frac{1}{3}$ of his pencils, what part of them had he left?

4. Mrs. French divided $\frac{2}{3}$ of a pie equally between 2 men. What part of the whole pie did she give to each?

5. If Alice spends $\frac{1}{3}$ of her money each day, how many days will it last?

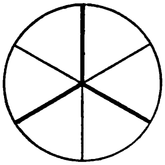
6. Luke had a dollar and spent $\frac{2}{3}$ of it for a book, and $\frac{1}{3}$ for a slâte. How much of his money did he spend?

7. Ada divided a peach among some children, giving each $\frac{1}{3}$. To how many children did she give a piece?

8. Into how many equal parts must Lottie divide $\frac{2}{3}$ of an orange to get $\frac{1}{3}$?

9. Mrs. Rich divided a basket of apples among some girls, giving $\frac{1}{3}$ to each. To how many girls did she give the apples?

SIXTHS.



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$\frac{2}{3}\div ?=\frac{1}{6}$
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$\frac{1}{2}-?=\frac{1}{6}$
$\frac{1}{2}-?=\frac{1}{3}$
$\frac{2}{3}-?=\frac{2}{6}$
$\frac{5}{6}-?=\frac{1}{6}$

1. Mrs. Sawyer divided a pie equally among 6 boys. What part did she give to each? Tell 2 ways in which she might have cut the pie. What part of the pie did 3 boys get? Four boys?

2. If Peter learns $\frac{1}{6}$ of his lesson each day, how long will it take him to learn his whole lesson?

3. Mrs. Black divided $\frac{1}{2}$ of a cocoanut equally among 3 children. What part of the whole cocoanut did she give to each?

4. Mr. Brown had a melon. He kept $\frac{1}{3}$ of it for himself and divided the remainder equally between 2 boys. How many sixths did he give to each?

5. How many days will it take Mary to read her book, if she reads $\frac{2}{6}$ of it each day?

6. Clara sold $\frac{1}{2}$ of her berries to Mrs. James, $\frac{1}{3}$ to Mrs. George, and the remainder to Mrs. Green. What part did she sell to Mrs. Green?

7. How should I cut $\frac{2}{3}$ of a pie to get $\frac{1}{6}$?

8. Which would you rather have, $\frac{2}{3}$ or $\frac{1}{2}$ of an orange? Why?

9. Mrs. King divided $\frac{2}{3}$ of a peck of cherries among some children, giving $\frac{1}{6}$ of a peck to each child. Among how many children did she divide her cherries?

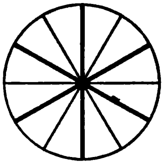
10. If George saves $\frac{3}{6}$ of a dollar a day, what part of a dollar does he save in 2 days?

11. If you can buy three boxes of berries for half a dollar, what part of a dollar is each box worth?

12. Margaret found some pretty shells at the beach. She kept $\frac{1}{6}$ of them herself, gave her sister $\frac{1}{6}$, and divided the remainder equally among her four cousins. What part of her shells did she give to each?

13. One-half of John's money is at home, one-third is in his pocket, and the remainder is in his hand. What part of his money is in his hand?

TWELFTHS.



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$\frac{5}{6} \div ? = \frac{1}{12}$

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$\frac{10}{12} - ? = \frac{1}{2}$

1. If Mrs. Bell divided a loaf of cake equally among 12 children, what part did she give to each? What part of the loaf would 2 children have? Three? Four? Five? Six? Seven? Eight? Nine? Ten children?

2. If Julia learns $\frac{1}{12}$ of a piece of poetry each day, how long will it take her to learn the whole piece?

3. If Marion has spent $\frac{6}{12}$ of her money, what part of it has she left?

4. Lucy had half of a dollar, and spent $\frac{1}{2}$ of it for a doll. How many twelfths of a dollar had she left?

5. Mrs. Crosby divided half a pie equally among her three children. How many twelfths did she give to each?

6. Harold divided a bag of nuts among his three brothers. To Lewis he gave $\frac{1}{3}$, to Arthur $\frac{1}{4}$, and the remainder to Nelson. What part of the nuts did he give to Nelson?

7. Elsie bought a stick of candy, and gave $\frac{1}{3}$ of it to Alice, $\frac{4}{12}$ to Julia, and kept the remainder herself. Which girl had the largest piece?

8. John chopped $\frac{1}{3}$ of his wood in the morning, $\frac{1}{6}$ of it at noon, and the remainder in the evening. What part of the wood did he chop in the evening?

9. Emily ran $\frac{1}{3}$ of the distance home. How many twelfths did she run?

10. Bessie wrote $\frac{3}{4}$ of her words on one of her slates, and the remainder on the other. How many twelfths did she write on the second slate?

11. Joseph had $\frac{3}{4}$ of his words spelled correctly, and Frank had $\frac{2}{3}$ of his. Which had the more right?

12. How many twelfths must be put with $\frac{1}{2}$ to make $\frac{2}{3}$?

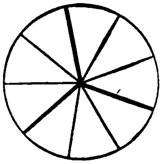
13. Mr. Smith let Ben drive $\frac{1}{3}$, and Frank $\frac{8}{12}$ of the way home. What part of the distance did both boys drive?

14. Kate cut $\frac{1}{3}$ of a pie into 2 equal parts. How many twelfths were there in each part?

15. If Laura saves $\frac{3}{12}$ of a dollar each day, how long will it take her to save a dollar?

16. Lena had a melon, and gave $\frac{1}{12}$ of it to each of her 10 playmates. What part of the melon had she left?

NINTHS.



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$\frac{8}{9}-?=\frac{2}{3}$

1. Fanny divided her beads into 9 equal parts. What part of her beads did she put in each?

2. How should I divide a pie into ninths?

3. Mr. Dean is going on a journey. If he travels $\frac{1}{9}$ of the distance each day, how many days will it take him to reach the place to which he is going?

4. If Mr. Black divided $\frac{1}{3}$ of a melon equally among 3 boys, what part of the melon would each boy receive?

5. Mrs. Jones had a loaf of cake, and gave 6 boys each $\frac{1}{9}$ of it. What part of the loaf did she give away? What part had she left?

6. Mr. Lee sold $\frac{4}{9}$ of his horses. What part had he left?

7. George cut $\frac{1}{3}$ of the grass in the morning, $\frac{2}{9}$ at noon, and the remainder after school in the afternoon. What part did he cut after school?

8. Laura had $\frac{7}{9}$ of her examples right. What part of them did she have wrong?

9. Which would you rather have, $\frac{2}{3}$ or $\frac{7}{9}$ of an orange?

10. Harry spent $\frac{4}{9}$ of his money for a book, $\frac{2}{9}$ of it for a box of pencils, $\frac{1}{9}$ for a rule, and the remainder for a slate. What part did he pay for the slate?

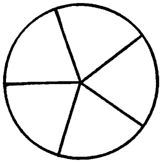
11. James sold all but $\frac{1}{9}$ of his chickens. What part of them did he sell?

12. Thomas divided $\frac{2}{3}$ of his nuts equally between his 2 brothers. How many ninths did he give to each?

13. If Mr. George cuts $\frac{3}{9}$ of his grass each day, how long will it take him to cut all of his grass?

14. If I have $\frac{7}{9}$ of a melon, to how many children can I give $\frac{1}{9}$?

FIFTHS.



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$\frac{3}{5}-?=\frac{2}{5}$
$\frac{4}{5}-?=\frac{1}{5}$
$\frac{4}{5}-?=\frac{3}{5}$
$\frac{2}{5}-?=0$

1. Dora divided an orange equally among her five sisters. What part of the orange did she give to each?

2. If Isabel makes $\frac{1}{5}$ of an apron each day, how long will it take her to make an apron?

3. Fred ate $\frac{3}{5}$ of a pie, and Cora $\frac{1}{5}$ of it. How much more did Fred eat than Cora? What part of the pie did both eat?

4. Alice spent $\frac{2}{5}$ of her money for peaches, and $\frac{2}{5}$ for pears. What part of her money had she left?

5. If Mr. Green sold $\frac{3}{5}$ of his cows, what part had he left?

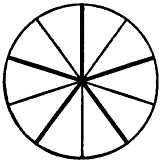
6. Mr. James bought a box of oranges, and sold all but $\frac{1}{5}$ of them to Mr. White. What part of his oranges did he sell?

7. Mary gave $\frac{1}{5}$ of her orange to Kate and $\frac{1}{5}$ to Mabel. What part did she keep for herself?

8. If John earns $\frac{1}{5}$ of a dollar a day, what part of a dollar will he earn in 2 days? Three? Four? Five days?

9. Lucy divided $\frac{4}{5}$ of an apple equally among 4 girls. What part of an apple did she give to each?

TENTHS.



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$\frac{2}{2}\div ?=\frac{1}{10}$

$\frac{1}{5}\div ?=\frac{1}{10}$

$\frac{2}{5}\div ?=\frac{1}{10}$

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$\frac{5}{5}\div ?=\frac{1}{10}$

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$\frac{1}{5}+?=\frac{6}{10}$

$\frac{7}{10}-?=\frac{1}{2}$

$\frac{8}{10}-?=\frac{1}{5}$

$\frac{9}{10}-?=\frac{7}{10}$

$\frac{6}{10}-\frac{?}{10}=\frac{2}{5}$

$\frac{4}{5}-\frac{?}{10}=\frac{3}{10}$

1. Mr. Smith divided a dollar equally among 10 children. What part of a dollar did he give to each?

2. Mrs. Green has $\frac{7}{10}$ of a pie left. What part of the pie has been eaten?

3. If Mr. Brown has $\frac{1}{2}$ of a dollar, to how many children can he give $\frac{1}{10}$ of a dollar?

4. Mrs. Jones used $\frac{2}{5}$ of her eggs in making a loaf of cake. How many tenths did she use?

5. Which would you rather have, $\frac{2}{5}$ or $\frac{1}{2}$ of an orange? Why?

6. If Charles earns $\frac{1}{10}$ of a dollar a day, how many days will it take him to earn one-half of a dollar? One dollar?

7. Mary gave away $\frac{2}{5}$ of her pencils, and broke $\frac{1}{10}$ of them. What part of her pencils had she left?

8. John sold $\frac{8}{10}$ of his papers. What part of them did he not sell?

9. If Lester has $\frac{3}{5}$ of a melon, to how many boys can he give $\frac{1}{10}$ of a melon?

10. Carl weeds $\frac{1}{10}$ of the garden each day. What part of it does he weed in 3 days? Four? Five? Six? Eight days?

11. If bread is worth $\frac{1}{10}$ of a dollar a loaf, how many loaves can be bought with one-half of a dollar? With $\frac{4}{5}$ of a dollar?

12. Mr. Long divided $\frac{8}{10}$ of a dollar equally among four boys. What part of a dollar did he give to each?

13. James had a bag full of nuts. $\frac{3}{5}$ of the nuts were walnuts, $\frac{3}{10}$ of them were almonds, and the remainder were chestnuts. What part of them were chestnuts?

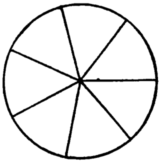
14. Edward earned some money last week shovelling snow. He spent $\frac{1}{5}$ of the money, gave his brother $\frac{3}{10}$, and put the remainder in his bank. What part of his money did he put in his bank?

15. Belle had her pail full of berries this morning, but she sold $\frac{1}{2}$ of them to her aunt, and $\frac{2}{5}$ of them to her uncle. How much more did she sell to her aunt than to her uncle? How much to both? How much has she left in her pail?

16. Mr. Smith bought some eggs of a farmer. He sold $\frac{2}{5}$ of them to Mrs. Wood, $\frac{3}{10}$ to Mrs. Hunter, and took the remainder home. What part of the eggs did he take home?

17. Homer saved $\frac{1}{10}$ of a dollar a day for five days. What part of a dollar did he save?

SEVENTHS.



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$\frac{3}{7}-?=\frac{2}{7}$

$\frac{6}{7}-?=\frac{4}{7}$

$\frac{5}{7}-?=\frac{2}{7}$

1. Tom divided some candy equally among 7 boys. What part of the candy did he give to each?

2. If Hattie knits $\frac{1}{7}$ of a stocking each day, how long will it take her to knit a stocking?

3. Robert spent $\frac{2}{7}$ of his money, and lost $\frac{1}{7}$ of it. What part of his money had he left?

4. Mrs. Russell cut a pie and gave Fannie $\frac{2}{7}$, and Laura $\frac{2}{7}$ of it. What part of the pie had she left?

5. If Julia has eaten all but $\frac{1}{7}$ of her orange, what part of it has she eaten?

6. Robert sold $\frac{6}{7}$ of his berries to Mrs. Jones and the remainder to Mrs. French. What part did he sell to Mrs. French?

7. Into how many equal parts must William cut $\frac{5}{7}$ of a melon to get $\frac{1}{7}$?

8. All but $\frac{2}{7}$ of Mr. Roger's house is finished. What part of it is finished?

9. Mrs. Jones gave $\frac{1}{7}$ of a pie to each of her 5 children. What part of the pie did she give them, and what part was left?

10. Jennie divided $\frac{3}{7}$ of a loaf of cake into 3 equal pieces. What part of the whole loaf was in each piece?

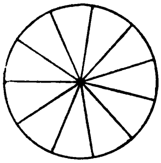
11. Sarah bought some peaches. She kept $\frac{1}{7}$ of them herself, and divided the remainder equally among her three brothers. What part of the peaches did she give to each?

12. Mr. Fuller spent $\frac{3}{7}$ of his money for a horse, $\frac{2}{7}$ of it for a carriage, and the remainder for a sleigh. What part of his money did he spend for the sleigh?

13. If Mrs. Small uses $\frac{1}{7}$ of a bag of flour each day, how long will a whole bag last her?

14. Mrs. Arnold baked a pie and gave each of her three sons $\frac{2}{7}$ of it. What part of the pie was left?

ELEVENTHS.



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$\frac{8}{11}-\ ?\ =\frac{3}{11}$

1. Mrs. Alden divided a melon equally among 11 persons. What part of the melon did she give to each?

2. Stephen has eaten $\frac{5}{11}$ of his cherries. What part of them has he left?

3. Alice divided $\frac{7}{11}$ of a pie equally among 7 girls. What part of the pie did she give to each?

4. Gertrude ate $\frac{3}{11}$ of her candy on Monday, $\frac{4}{11}$ on Tuesday, and the remainder on Wednesday. What part of her candy did she eat on Wednesday?

5. Edward rode $\frac{9}{11}$ of the distance to school, and walked the remainder. What part of the way did he walk?

6. What must be added to $\frac{6}{11}$ to make $\frac{10}{11}$?

7. John mows $\frac{1}{11}$ of his grass each day. What part of the grass does he mow in 3 days? Five days? Eight days?

8. Carl spelled all but $\frac{2}{11}$ of his words right. What part of them were right?

9. Lucy gave $\frac{3}{11}$ of her candy to her sister, and $\frac{3}{11}$ to her brother. What part of her candy did she give away? What part did she have left?

10. Mrs. Shaw had a melon and gave 2 boys each $\frac{3}{11}$ of it. What part of the melon did she give away? What part of it had she left?

11. Mr. Field divided $\frac{9}{11}$ of a pie equally among three children. What part of the pie did he give to each child?

12. Helen broke $\frac{2}{11}$ of her pencils, and gave her brother $\frac{5}{11}$ of them. What part of her pencils did she have left?

13. If Charles weeds $\frac{1}{11}$ of the garden each day, how long will it take him to weed the whole garden?

14. Thomas has $\frac{3}{11}$ of his peach left. What part of his peach has he eaten?

15. If $\frac{1}{11}$ of the children were absent from school, what part of them were present?

16. Alice spent $\frac{1}{11}$ of her money, put $\frac{8}{11}$ of it in her bank, and bought a book with the remainder. What part of her money did she spend for the book?

17. Horace sharpened $\frac{8}{11}$ of the pencils, and John sharpened the remainder. What part of the pencils did John sharpen? How much more did Horace sharpen than John?

18. Ralph ate $\frac{3}{11}$ of his orange, and then divided what was left equally between his two sisters. What part of the orange did he give to each?

19. Mary had $\frac{10}{11}$ of her examples right. What part of her examples did she have wrong?

20. Lucy ate $\frac{4}{11}$ of her candy in the morning, $\frac{5}{11}$ of it in the afternoon, and the remainder in the evening. What part of her candy did she eat in the evening?

21. Mr. Fish sold $\frac{3}{11}$ of his sheep to Mr. Bell, $\frac{7}{11}$ of them to Mr. Short, and the remainder to Mr. Pope. What part of his sheep did he sell to Mr. Pope?

22. James sold all but $\frac{2}{11}$ of his papers. What part of his papers did he sell?

23. Mr. Arnold sold $\frac{3}{11}$ of his eggs to Mrs. Clark, $\frac{5}{11}$ of them to Mrs. Foster, and the remainder to Mrs. West. What part of his eggs did he sell to Mrs. West?

24. How long will $\frac{10}{11}$ of a barrel of flour last Mrs. Friend, if she uses $\frac{2}{11}$ of a barrel each day?

25. Mrs. Stone gave 3 boys each $\frac{3}{11}$ of a pie. What part of the whole pie did she give away?

26. Cora divided $\frac{6}{11}$ of an orange equally among 3 girls. What part of the whole orange did she give to each?

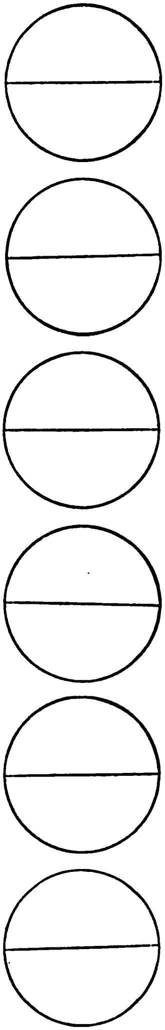
27. Mrs. Long divided $\frac{10}{11}$ of a pound of candy among some children, giving $\frac{2}{11}$ of a pound to each child. Among how many children did she divide the candy?

28. Jacob spent $\frac{2}{11}$ of his money for a bat, $\frac{3}{11}$ of it for a ball, $\frac{4}{11}$ for a book, and the remainder for a slate. What part of his money did he spend for the slate?

29. If Kate has $\frac{5}{11}$ of her orange left, what part of the orange has she eaten?

30. Mr. Smith has paid for all but $\frac{3}{11}$ of his farm. What part of his farm is paid for?

HALVES.



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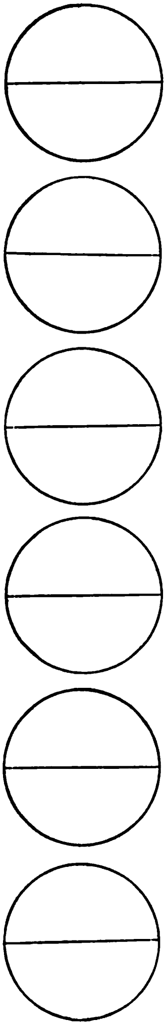

1. Mary sold 12 quarts of milk. How many half-quarts did she sell?

2. William has 20 half-dollars. If he changes these into dollars, how many dollars will he have?

3. Ben picked $10\frac{1}{2}$ quarts of cherries. How many half-quarts did he pick?

4. Mr. Brown had 24 barrels of apples. If he sold $\frac{1}{2}$ of them, how many barrels did he sell? How many had he left?

5. Mrs. Barnes used 22 half-apples in making some pies. How many apples did she use?

6. One-half of the windows in an old house are broken. If seven are broken, how many windows are there in the house?

7. Jennie had 6 apples. She gave $\frac{1}{2}$ of them to Kate, and $\frac{1}{2}$ to Ella. How many apples did she give away?

8. If John earns $\frac{1}{2}$ of a dollar a day, how long will it take him to earn $\$5$? How much does he earn in 13 days?

9. There are 18 peaches on a tree. If $\frac{1}{2}$ of them are picked off, how many peaches will be left on the tree?

10. Harold is 16 years old, and his brother is $\frac{1}{2}$ his age. How old is his brother?

11. Jane had 14 cents and spent seven of them. What part of her money did she spend?

12. Samuel has $\frac{1}{2}$ of 22 chickens, and Ernest has $\frac{1}{2}$ of 24 chickens. How many more chickens has Ernest than Samuel?

13. Peter has $\frac{1}{2}$ of 16 cents in one pocket, and $\frac{1}{2}$ of 18 cents in another. How many cents has he in both pockets?

14. Which would you rather have, $\frac{2}{2}$ of 11 oranges, or $\frac{1}{2}$ of 22 oranges?

15. Lucy had a dozen plums. She gave Stella $\frac{1}{2}$ of them, and ate 4 of them herself. How many plums had she left?

REVIEW AND BUSY WORK.

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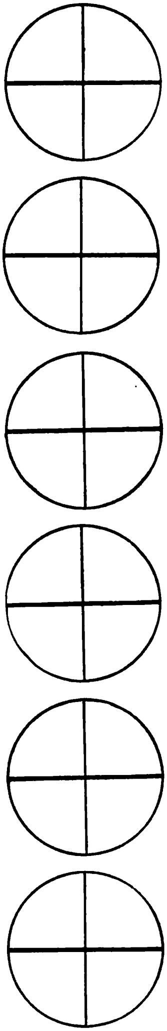
FOURTHS.



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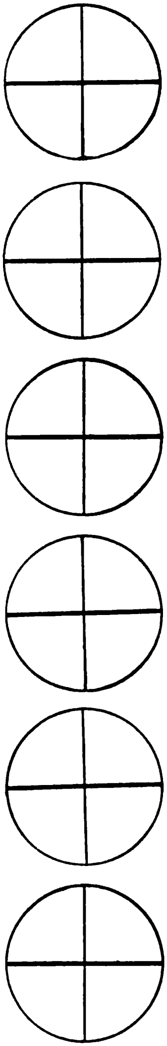
FOURTHS.



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25, 26, 27, 28, 29, 30,
31, 32, 33, 34, 35, 36,
37, 38, 39, 40, 41, 42,
43, 44, 45, 46, 47, 48.

$\frac{2}{4}$ of 4, 8, 12, 16, 20, 24,
28, 32, 36, 40, 44, 48.

Find $\frac{1}{4}$ first.

$\frac{3}{4}$ of 4, 8, 12, 16, 20, 24,
28, 32, 36, 40, 44, 48.

First find $\frac{1}{4}$.

$\frac{4}{4}$ of 3, 8, 17, 24, 37, 40,
41, 45, 48.

1 is $\frac{1}{4}$ of what number?
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1. Molly cut 5 apples into fourths. How many fourths had she?

2. George has sold $\frac{3}{4}$ of his papers. If he has 6 papers left, how many had he to begin with? How many papers has he sold?

3. Kate had 20 nuts, but she ate $\frac{2}{4}$ of them. How many nuts had she left?

4. Sam's kite-string is 48 feet long; his brother's is only $\frac{3}{4}$ as long. How long is his brother's string?

5. Mary has five cents, which is $\frac{1}{4}$ of the money she had this morning. How many cents had she then?

6. George changed $\$5\frac{1}{2}$ into quarters. How many quarters had he?

7. Lucy gave Alice $\frac{1}{4}$ of 13 pears. How many pears did she give her?

8. Philip and his brothers together picked 20 quarts of berries. They sold $\frac{1}{4}$ of them to Mrs. Brown, and $\frac{2}{4}$ to Mrs. Ames. How many quarts did they sell to both? How many quarts had they left?

9. There are 24 windows in Mr. Brown's house, and $\frac{1}{4}$ as many in his barn. How many windows are there in his barn? How many windows in both?

10. Leo has saved 26 quarters. If he changes these into dollars, how many dollars will he have?

11. Which would you rather have, $2, 4 half-dollars, or 8 quarters?

12. Mrs. Jones spent $\frac{1}{4}$ of $5 for a book. What was the price of the book? How much money had she left?

13. John had 36 cherries and ate $\frac{3}{4}$ of them. How many cherries had he left?

14. Mary has eaten $\frac{3}{4}$ of her cherries. If she has 10 left, how many cherries did she have at first?

REVIEW AND BUSY WORK.

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$\frac{1}{4}$ of 1, 9, 17, 25, 33, 41
42, 34, 26, 18, 10, 2
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44, 5, 21, 29, 37, 45
6, 14, 15, 22, 46, 38
31, 7, 30, 39, 23, 47
8, 16, 32, 48, 40, 24

$\frac{2}{4}$ of 4, 20, 36, 8, 24, 48
12, 28, 44, 16, 32, 40

$\frac{3}{4}$ of 40, 16, 32, 44, 28, 48
12, 24, 8, 20, 36, 4
First find $\frac{1}{4}$, then $\frac{3}{4}$.

$\frac{4}{4}$ of 7, 9, 16, 21, 35, 46
2, 11, 25, 40, 17, 48

4 is $\frac{1}{4}$ of what number?
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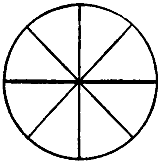
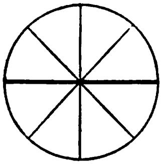
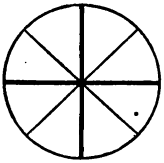
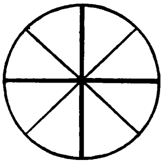
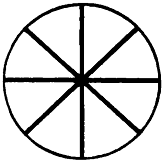
EIGHTHS.

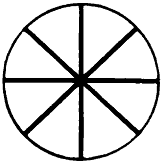












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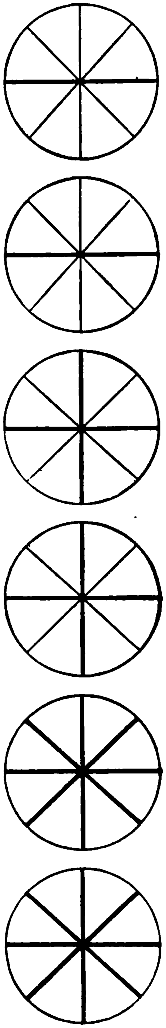
$11=$	$11\frac{1}{8}=$	$11\frac{1}{4}=$	$11\frac{3}{8}=$
$12=$			
$\frac{8}{8}=$	$\frac{9}{8}=$	$\frac{10}{8}=$	$\frac{11}{8}=$
$\frac{16}{8}=$	$\frac{17}{8}=$	$\frac{18}{8}=$	$\frac{19}{8}=$
$\frac{24}{8}=$	$\frac{25}{8}=$	$\frac{26}{8}=$	$\frac{27}{8}=$
$\frac{32}{8}=$	$\frac{33}{8}=$	$\frac{34}{8}=$	$\frac{35}{8}=$
$\frac{40}{8}=$	$\frac{41}{8}=$	$\frac{42}{8}=$	$\frac{43}{8}=$
$\frac{48}{8}=$	$\frac{49}{8}=$	$\frac{50}{8}=$	$\frac{51}{8}=$
$\frac{56}{8}=$	$\frac{57}{8}=$	$\frac{58}{8}=$	$\frac{59}{8}=$
$\frac{64}{8}=$	$\frac{65}{8}=$	$\frac{66}{8}=$	$\frac{67}{8}=$
$\frac{72}{8}=$	$\frac{73}{8}=$	$\frac{74}{8}=$	$\frac{75}{8}=$
$\frac{80}{8}=$	$\frac{81}{8}=$	$\frac{82}{8}=$	$\frac{83}{8}=$
$\frac{88}{8}=$	$\frac{89}{8}=$	$\frac{90}{8}=$	$\frac{91}{8}=$
$\frac{96}{8}=$			

EIGHTHS.



$1\frac{1}{2}=\frac{?}{8}$ $1\frac{5}{8}=\frac{?}{8}$ $1\frac{3}{4}=\frac{\ }{8}$ $1\frac{5}{8}=\frac{?}{8}$
$2\frac{1}{2}=$ $2\frac{5}{8}=$ $2\frac{3}{4}=$ $2\frac{5}{8}=$
$3\frac{1}{2}=$ $3\frac{5}{8}=$ $3\frac{3}{4}=$ $3\frac{5}{8}=$
$4\frac{1}{2}=$ $4\frac{5}{8}=$ $4\frac{3}{4}=$ $4\frac{5}{8}=$
$5\frac{1}{2}=$ $5\frac{5}{8}=$ $5\frac{3}{4}=$ $5\frac{5}{8}=$
$6\frac{1}{2}=$ $6\frac{5}{8}=$ $6\frac{3}{4}=$ $6\frac{5}{8}=$
$7\frac{1}{2}=$ $7\frac{5}{8}=$ $7\frac{3}{4}=$ $7\frac{5}{8}=$
$8\frac{1}{2}=$ $8\frac{5}{8}=$ $8\frac{3}{4}=$ $8\frac{5}{8}=$
$9\frac{1}{2}=$ $9\frac{5}{8}=$ $9\frac{3}{4}=$ $9\frac{5}{8}=$
$10\frac{1}{2}=$ $10\frac{5}{8}=$ $10\frac{3}{4}=$ $10\frac{5}{8}=$
$11\frac{1}{2}=$ $11\frac{5}{8}=$ $11\frac{3}{4}=$ $11\frac{5}{8}=$

$\frac{12}{8}=$ $\frac{13}{8}=$ $\frac{14}{8}=$ $\frac{15}{8}=$
$\frac{20}{8}=$ $\frac{21}{8}=$ $\frac{22}{8}=$ $\frac{23}{8}=$
$\frac{28}{8}=$ $\frac{29}{8}=$ $\frac{30}{8}=$ $\frac{31}{8}=$
$\frac{36}{8}=$ $\frac{37}{8}=$ $\frac{38}{8}=$ $\frac{39}{8}=$
$\frac{44}{8}=$ $\frac{45}{8}=$ $\frac{46}{8}=$ $\frac{47}{8}=$
$\frac{52}{8}=$ $\frac{53}{8}=$ $\frac{54}{8}=$ $\frac{55}{8}=$
$\frac{60}{8}=$ $\frac{61}{8}=$ $\frac{62}{8}=$ $\frac{63}{8}=$
$\frac{68}{8}=$ $\frac{69}{8}=$ $\frac{70}{8}=$ $\frac{71}{8}=$
$\frac{76}{8}=$ $\frac{77}{8}=$ $\frac{78}{8}=$ $\frac{79}{8}=$
$\frac{84}{8}=$ $\frac{85}{8}=$ $\frac{86}{8}=$ $\frac{87}{8}=$
$\frac{92}{8}=$ $\frac{93}{8}=$ $\frac{94}{8}=$ $\frac{95}{8}=$

Find $\frac{1}{8}$ of the numbers from 1 to 96.

Ex. $\frac{1}{8}$ of $1=$
$\frac{1}{8}$ of $2=$
$\frac{1}{8}$ of $3=$
$\frac{1}{8}$ of $4=$
$\frac{1}{8}$ of $5=$
$\frac{1}{8}$ of $6=$
$\frac{1}{8}$ of $7=$
$\frac{1}{8}$ of $8=$
$\frac{1}{8}$ of $9=$
$\frac{1}{8}$ of $10=$ etc.

Find $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$ and $\frac{7}{8}$ of 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88 and 96.

Find $\frac{1}{8}$ first each time.

Ex. $\frac{1}{8}$ of $8=$ $\frac{1}{8}$ of $16=$ $\frac{1}{8}$ of $24=$
$\frac{2}{8}$ of $8=$ $\frac{2}{8}$ of $16=$ $\frac{2}{8}$ of $24=$ etc.

1 is $\frac{1}{8}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. Clara picked 1 quart of berries, which was $\frac{1}{8}$ as much as Elsie picked. How many quarts did Elsie pick?

2. Joseph had 72 newspapers. If he sold $\frac{7}{8}$ of them, how many papers did he sell? How many papers had he left?

3. Mr. Brown had 56 peaches, and put $\frac{6}{8}$ of them into a basket. How many did he put into the basket? He divided what he had left equally between his two sons. What part of his peaches did he give to each? How many peaches?

4. Cora travelled 32 miles. She went $\frac{5}{8}$ of the distance in the cars, and the remainder in a carriage. How many miles did she travel in the cars, and how many in the carriage? How many more miles in the cars than in the carriage?

5. Josie's book has 48 pages in it, and she has read $\frac{7}{8}$ of them. How many pages has she still to read?

6. How many melons will it take to give 20 boys each $\frac{1}{8}$ of a melon?

7. I have 10 cents, which is $\frac{1}{8}$ as much as I had this morning. How many cents had I then?

8. Marion divided $\frac{2}{8}$ of 32 peaches equally between 2 girls. How many peaches did she give to each?

9. Fannie divided $8\frac{1}{2}$ oranges into eighths. How many eighths had she?

10. If Kate saves $\frac{1}{8}$ of 80 cents a day, how much will she save in 9 days?

11. Laura had 96 cents. She spent $\frac{2}{8}$ of her money for a doll and $\frac{3}{8}$ for a book. How many cents did she pay for both? How many cents had she left?

REVIEW AND BUSY WORK.

$9=\frac{?}{8}$ $4\frac{1}{2}=\frac{?}{8}$ $11\frac{3}{4}=\frac{?}{8}$ $8\frac{1}{8}=\frac{?}{8}$ $3\frac{5}{8}=\frac{?}{8}$ $10\frac{1}{4}=\frac{?}{8}$ $6\frac{7}{8}=\frac{?}{8}$ $2\frac{3}{8}=\frac{?}{8}$
$4=$ $11\frac{1}{2}=$ $8\frac{3}{4}=$ $3\frac{1}{8}=$ $10\frac{5}{8}=$ $6\frac{1}{4}=$ $2\frac{7}{8}=$ $7\frac{3}{8}=$
$11=$ $8\frac{1}{2}=$ $3\frac{3}{4}=$ $10\frac{1}{8}=$ $6\frac{5}{8}=$ $2\frac{1}{4}=$ $7\frac{7}{8}=$ $5\frac{3}{8}=$
$8=$ $3\frac{1}{2}=$ $10\frac{3}{4}=$ $6\frac{1}{8}=$ $2\frac{5}{8}=$ $7\frac{1}{4}=$ $5\frac{7}{8}=$ $1\frac{3}{8}=$
$3=$ $10\frac{1}{2}=$ $6\frac{3}{4}=$ $2\frac{1}{8}=$ $7\frac{5}{8}=$ $5\frac{1}{4}=$ $1\frac{7}{8}=$ $9\frac{3}{8}=$
$10=$ $6\frac{1}{2}=$ $2\frac{3}{4}=$ $7\frac{1}{8}=$ $5\frac{5}{8}=$ $1\frac{1}{4}=$ $9\frac{7}{8}=$ $4\frac{3}{8}=$
$6=$ $2\frac{1}{2}=$ $7\frac{3}{4}=$ $5\frac{1}{8}=$ $1\frac{5}{8}=$ $9\frac{1}{4}=$ $4\frac{7}{8}=$ $11\frac{3}{8}=$
$2=$ $7\frac{1}{2}=$ $5\frac{3}{4}=$ $1\frac{1}{8}=$ $9\frac{5}{8}=$ $4\frac{1}{4}=$ $11\frac{7}{8}=$ $8\frac{3}{8}=$
$7=$ $5\frac{1}{2}=$ $1\frac{3}{4}=$ $9\frac{1}{8}=$ $4\frac{5}{8}=$ $11\frac{1}{4}=$ $8\frac{7}{8}=$ $3\frac{3}{8}=$
$5=$ $1\frac{1}{2}=$ $9\frac{3}{4}=$ $4\frac{1}{8}=$ $11\frac{5}{8}=$ $8\frac{1}{4}=$ $3\frac{7}{8}=$ $10\frac{3}{8}=$
$1=$ $9\frac{1}{2}=$ $4\frac{3}{4}=$ $11\frac{1}{8}=$ $8\frac{5}{8}=$ $3\frac{1}{4}=$ $10\frac{7}{8}=$ $6\frac{3}{8}=$
$12=$

$\frac{8}{8}=$ $\frac{44}{8}=$ $\frac{62}{8}=$ $\frac{17}{8}=$ $\frac{53}{8}=$ $\frac{82}{8}=$ $\frac{31}{8}=$ $\frac{67}{8}=$
$\frac{72}{8}=$ $\frac{12}{8}=$ $\frac{46}{8}=$ $\frac{57}{8}=$ $\frac{21}{8}=$ $\frac{50}{8}=$ $\frac{87}{8}=$ $\frac{27}{8}=$
$\frac{32}{8}=$ $\frac{76}{8}=$ $\frac{14}{8}=$ $\frac{41}{8}=$ $\frac{61}{8}=$ $\frac{18}{8}=$ $\frac{55}{8}=$ $\frac{83}{8}=$
$\frac{88}{8}=$ $\frac{36}{8}=$ $\frac{78}{8}=$ $\frac{9}{8}=$ $\frac{45}{8}=$ $\frac{58}{8}=$ $\frac{23}{8}=$ $\frac{51}{8}=$
$\frac{64}{8}=$ $\frac{92}{8}=$ $\frac{38}{8}=$ $\frac{73}{8}=$ $\frac{13}{8}=$ $\frac{42}{8}=$ $\frac{63}{8}=$ $\frac{19}{8}=$
$\frac{24}{8}=$ $\frac{68}{8}=$ $\frac{94}{8}=$ $\frac{33}{8}=$ $\frac{77}{8}=$ $\frac{10}{8}=$ $\frac{47}{8}=$ $\frac{59}{8}=$
$\frac{80}{8}=$ $\frac{28}{8}=$ $\frac{70}{8}=$ $\frac{89}{8}=$ $\frac{37}{8}=$ $\frac{74}{8}=$ $\frac{15}{8}=$ $\frac{43}{8}=$
$\frac{48}{8}=$ $\frac{84}{8}=$ $\frac{30}{8}=$ $\frac{65}{8}=$ $\frac{93}{8}=$ $\frac{34}{8}=$ $\frac{79}{8}=$ $\frac{11}{8}=$
$\frac{16}{8}=$ $\frac{52}{8}=$ $\frac{36}{8}=$ $\frac{25}{8}=$ $\frac{69}{8}=$ $\frac{90}{8}=$ $\frac{39}{8}=$ $\frac{75}{8}=$
$\frac{56}{8}=$ $\frac{20}{8}=$ $\frac{54}{8}=$ $\frac{81}{8}=$ $\frac{29}{8}=$ $\frac{66}{8}=$ $\frac{95}{8}=$ $\frac{35}{8}=$
$\frac{40}{8}=$ $\frac{60}{8}=$ $\frac{22}{8}=$ $\frac{49}{8}=$ $\frac{85}{8}=$ $\frac{26}{8}=$ $\frac{71}{8}=$ $\frac{91}{8}=$
$\frac{96}{8}=$

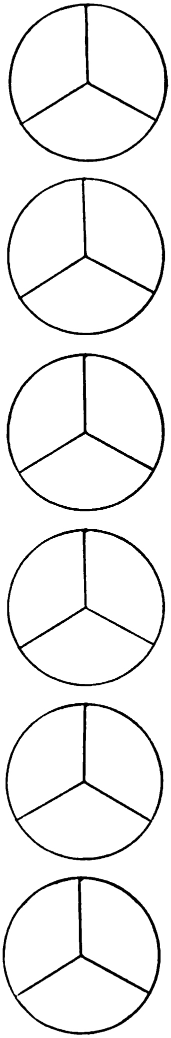
Find $\frac{1}{8}$ of

1	17	2	18	4	19	3	20
33	49	34	50	35	51	36	52
65	81	66	82	67	83	68	84
5	21	6	22	7	23	8	28
53	37	54	38	55	39	56	40
85	69	86	70	87	71	88	72
9	24	10	25	11	26	12	27
41	57	42	58	43	59	44	60
89	73	90	74	91	75	92	76
13	29	14	30	15	31	16	32
61	45	62	46	63	47	64	48
77	93	78	94	79	95	80	96

Find $\frac{3}{8}$ of 40, 8, 48, 16, 56, 24, 80, 32, 88, 64, 96, and 72.
Find $\frac{7}{8}$ of 72, 88, 24, 48, 96, 32, 56, 8, 64, 80, 16, and 40.
Find $\frac{2}{8}$ of 64, 96, 72, 80, 32, 88, 16, 56, 24, 40, 8, and 48.
Find $\frac{5}{8}$ of 8, 56, 32, 96, 72, 88, 24, 48, 40, 16, 80, and 64.
Find $\frac{4}{8}$ of 96, 32, 56, 8, 48, 88, 24, 72, 40, 80, 16, and 64.
Find $\frac{6}{8}$ of 24, 72, 88, 48, 96, 56, 32, 8, 64, 16, 40, and 80.
How many are $\frac{8}{8}$ of 1, 5, 16, 72, 3, 15, 47, 99, and 63.

12 is $\frac{1}{8}$ of what number?
6 " " "
11 " " "
5 " " "
10 " " "
4 " " "
9 " " "
3 " " "
8 " " "
2 " " "
7 " " "
1 " " "

THIRDS.



$1=\frac{?}{3}$ $1\frac{1}{3}=\frac{?}{3}$ $1\frac{2}{3}=\frac{?}{3}$

$2=$ $2\frac{1}{3}=$ $2\frac{2}{3}=$

$3=$ $3\frac{1}{3}=$ $3\frac{2}{3}=$

$4=$ $4\frac{1}{3}=$ $4\frac{2}{3}=$

$5=$ $5\frac{1}{3}=$ $5\frac{2}{3}=$

$6=$ $6\frac{1}{3}=$ $6\frac{2}{3}=$

$7=$ $7\frac{1}{3}=$ $7\frac{2}{3}=$

$8=$ $8\frac{1}{3}=$ $8\frac{2}{3}=$

$9=$ $9\frac{1}{3}=$ $9\frac{2}{3}=$

$10=$ $10\frac{1}{3}=$ $10\frac{2}{3}=$

$11=$ $11\frac{1}{3}=$ $11\frac{2}{3}=$

$12=$ $12\frac{1}{3}=$ $12\frac{2}{3}=$

$\frac{3}{3}=$ $\frac{4}{3}=$ $\frac{5}{3}=$

$\frac{6}{3}=$ $\frac{7}{3}=$ $\frac{8}{3}=$

$\frac{9}{3}=$ $\frac{10}{3}=$ $\frac{11}{3}=$

$\frac{12}{3}=$ $\frac{13}{3}=$ $\frac{14}{3}=$

$\frac{15}{3}=$ $\frac{16}{3}=$ $\frac{17}{3}=$

$\frac{18}{3}=$ $\frac{19}{3}=$ $\frac{20}{3}=$

$\frac{21}{3}=$ $\frac{22}{3}=$ $\frac{23}{3}=$

$\frac{24}{3}=$ $\frac{25}{3}=$ $\frac{26}{3}=$

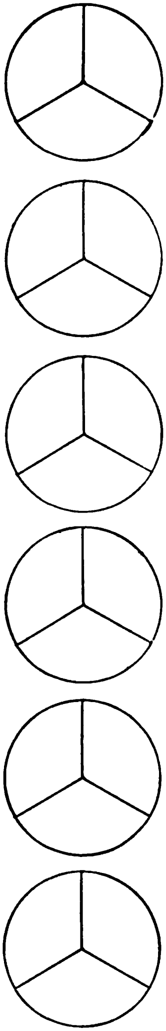
$\frac{27}{3}=$ $\frac{28}{3}=$ $\frac{29}{3}=$

$\frac{30}{3}=$ $\frac{31}{3}=$ $\frac{32}{3}=$

$\frac{33}{3}=$ $\frac{34}{3}=$ $\frac{35}{3}=$

$\frac{36}{3}=$ $\frac{37}{3}=$ $\frac{38}{3}=$

THIRDS.



$\frac{1}{3}$ of 1, 2, 3, 4, 5, 6,
7, 8, 9, 10, 11, 12,
13, 14, 15, 16, 17, 18,
19, 20, 21, 22, 23, 24,
25, 26, 27, 28, 29, 30,
31, 32, 33, 34, 35, 36,

Find $\frac{2}{3}$ of 3, 6, 9, 12, 15,
18, 21, 24, 27, 30,
33, 36.
First find $\frac{1}{3}$.

Find $\frac{3}{3}$ of 3, 6, 9, 12, 15,
18, 21, 24, 27, 30,
33, 36.
Find $\frac{1}{3}$ first.

How many are $\frac{3}{3}$ of
1, 2, 4, 7, 10,
11, 13, 16, 19, 22,
25, 29, 35.

1 is $\frac{1}{3}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. How many thirds are there in 11 oranges?

2. Mrs. Smith cut some pies into thirds. If she had 21 thirds, how many pies must she have cut?

3. Mr. Brown paid Mr. White $7, which was $\frac{1}{3}$ of the money he owed him. How much did he owe him?

4. John's kite string was 36 yards long, but he cut off $\frac{1}{3}$ of it. How long was it then?

5. Clara is $\frac{1}{3}$ as old as her mother. If she is eleven years old, what is her mother's age?

6. Mr. James has 30 barrels of apples. If he sells $\frac{2}{3}$ of them, how many barrels will he have left?

7. Lucy picked 24 roses from her rose bush. If she gave $\frac{1}{3}$ of them to her mother and $\frac{1}{3}$ to her teacher, how many roses did she have left?

8. George had 7 plums. If he ate $\frac{2}{3}$ of them, how many plums did he eat?

9. Mrs. Drake used $\frac{1}{3}$ of 12 apples in making a pie. How many apples did she use?

10. Charles gave $\frac{1}{3}$ of a pineapple to each of his ten schoolmates. How many pineapples did he give away?

11. Dorothy cut up $11\frac{2}{3}$ peaches into thirds. How many thirds had she?

12. John ate $\frac{1}{3}$ of 7 apples. How many apples did he eat?

13. Edith had 27 cents and spent 9 of them for a ball. What part of her money did she spend?

14. How many nuts must be added to $\frac{2}{3}$ of 21 nuts to make 20 nuts?

15. John earned $\frac{2}{3}$ of 18 cents, and William earned $\frac{1}{3}$ of 36 cents. Which boy earned the more money?

WORK FOR REVIEW.

$8=\frac{?}{3}$

$11=$

$4=$

$9=$

$7=$

$2=$

$10=$

$6=$

$3=$

$1=$

$5=$

$12=$

$5\frac{2}{3}=\frac{?}{3}$

$8\frac{2}{3}=$

$11\frac{2}{3}=$

$4\frac{2}{3}=$

$9\frac{2}{3}=$

$7\frac{2}{3}=$

$2\frac{2}{3}=$

$10\frac{2}{3}=$

$6\frac{2}{3}=$

$3\frac{2}{3}=$

$1\frac{2}{3}=$

$1\frac{1}{3}=\frac{?}{3}$

$5\frac{1}{3}=$

$8\frac{1}{3}=$

$11\frac{1}{3}=$

$4\frac{1}{3}=$

$9\frac{1}{3}=$

$7\frac{1}{3}=$

$2\frac{1}{3}=$

$10\frac{1}{3}=$

$6\frac{1}{3}=$

$3\frac{1}{3}=$

$\frac{9}{3}=$

$\frac{3}{3}=$

$\frac{15}{3}=$

$\frac{24}{3}=$

$\frac{33}{3}=$

$\frac{12}{3}=$

$\frac{27}{3}=$

$\frac{21}{3}=$

$\frac{6}{3}=$

$\frac{30}{3}=$

$\frac{18}{3}=$

$\frac{36}{3}=$

$\frac{20}{3}=$

$\frac{11}{3}=$

$\frac{5}{3}=$

$\frac{17}{3}=$

$\frac{26}{3}=$

$\frac{35}{3}=$

$\frac{14}{3}=$

$\frac{29}{3}=$

$\frac{23}{3}=$

$\frac{8}{3}=$

$\frac{32}{3}=$

$\frac{31}{3}=$

$\frac{19}{3}=$

$\frac{10}{3}=$

$\frac{4}{3}=$

$\frac{16}{3}=$

$\frac{25}{3}=$

$\frac{34}{3}=$

$\frac{13}{3}=$

$\frac{28}{3}=$

$\frac{22}{3}=$

$\frac{7}{3}=$

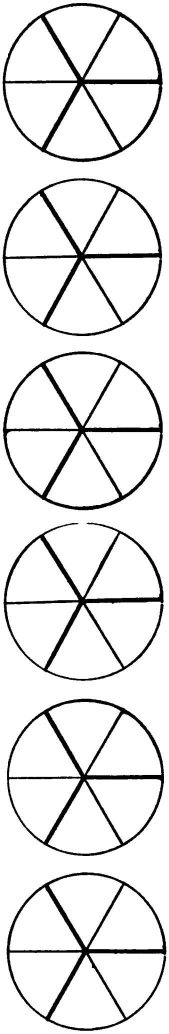
$\frac{1}{3}$ of 1, 12, 23, 2, 13,
24, 35, 3, 14, 25,
4, 15, 26, 34, 5,
16, 27, 6, 19, 28,
7, 18, 29, 36, 8,
17, 30, 9, 20, 31,
10, 21, 32, 11, 22,
33.

$\frac{2}{3}$ of 3, 15, 27, 6, 18,
30, 9, 21, 33, 12,
24, 36.
Find $\frac{1}{3}$ first.

$\frac{3}{3}$ of 36, 21, 6, 27, 9,
12, 24, 15, 30, 18,
3, 33.
First find $\frac{1}{3}$.

7 is $\frac{1}{3}$ of what number?
2 " " "
9 " " "
11 " " "
6 " " "
3 " " "
8 " " "
4 " " "
10 " " "
5 " " "
1 " " "
12 " " "

SIXTHS.



$1=\frac{?}{6}$ $1\frac{1}{6}=\frac{?}{6}$ $1\frac{1}{3}=\frac{?}{6}$

$2=$ $2\frac{1}{6}=$ $2\frac{1}{3}=$

$3=$ $3\frac{1}{6}=$ $3\frac{1}{3}=$

$4=$ $4\frac{1}{6}=$ $4\frac{1}{3}=$

$5=$ $5\frac{1}{6}=$ $5\frac{1}{3}=$

$6=$ $6\frac{1}{6}=$ $6\frac{1}{3}=$

$7=$ $7\frac{1}{6}=$ $7\frac{1}{3}=$

$8=$ $8\frac{1}{6}=$ $8\frac{1}{3}=$

$9=$ $9\frac{1}{6}=$ $9\frac{1}{3}=$

$10=$ $10\frac{1}{6}=$ $10\frac{1}{3}=$

$11=$ $11\frac{1}{6}=$ $11\frac{1}{3}=$

$12=$

$\frac{6}{6}=$ $\frac{7}{6}=$ $\frac{8}{6}=$

$\frac{12}{6}=$ $\frac{13}{6}=$ $\frac{14}{6}=$

$\frac{18}{6}=$ $\frac{19}{6}=$ $\frac{20}{6}=$

$\frac{24}{6}=$ $\frac{25}{6}=$ $\frac{26}{6}=$

$\frac{30}{6}=$ $\frac{31}{6}=$ $\frac{32}{6}=$

$\frac{36}{6}=$ $\frac{37}{6}=$ $\frac{38}{6}=$

$\frac{42}{6}=$ $\frac{43}{6}=$ $\frac{44}{6}=$

$\frac{48}{6}=$ $\frac{49}{6}=$ $\frac{50}{6}=$

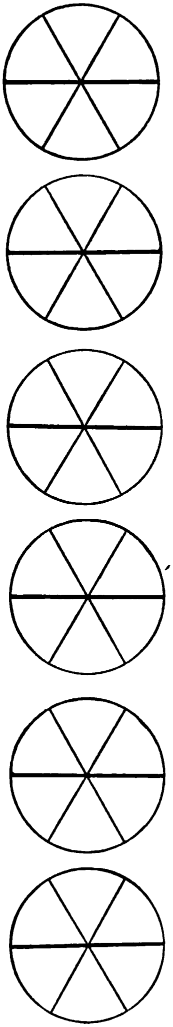
$\frac{54}{6}=$ $\frac{55}{6}=$ $\frac{56}{6}=$

$\frac{60}{6}=$ $\frac{61}{6}=$ $\frac{62}{6}=$

$\frac{66}{6}=$ $\frac{67}{6}=$ $\frac{68}{6}=$

$\frac{72}{6}=$ $\frac{73}{6}=$ $\frac{74}{6}=$

SIXTHS.



$1\frac{1}{2}=\frac{?}{6}$	$1\frac{2}{3}=\frac{?}{6}$	$1\frac{5}{6}=\frac{?}{6}$
$2\frac{1}{2}=$	$2\frac{2}{3}=$	$2\frac{5}{6}=$
$3\frac{1}{2}=$	$3\frac{2}{3}=$	$3\frac{5}{6}=$
$4\frac{1}{2}=$	$4\frac{2}{3}=$	$4\frac{5}{6}=$
$5\frac{1}{2}=$	$5\frac{2}{3}=$	$5\frac{5}{6}=$
$6\frac{1}{2}=$	$6\frac{2}{3}=$	$6\frac{5}{6}=$
$7\frac{1}{2}=$	$7\frac{2}{3}=$	$7\frac{5}{6}=$
$8\frac{1}{2}=$	$8\frac{2}{3}=$	$8\frac{5}{6}=$
$9\frac{1}{2}=$	$9\frac{2}{3}=$	$9\frac{5}{6}=$
$10\frac{1}{2}=$	$10\frac{2}{3}=$	$10\frac{5}{6}=$
$11\frac{1}{2}=$	$11\frac{2}{3}=$	$11\frac{5}{6}=$

$\frac{9}{6}=$	$\frac{10}{6}=$	$\frac{11}{6}=$
$\frac{15}{6}=$	$\frac{16}{6}=$	$\frac{17}{6}=$
$\frac{21}{6}=$	$\frac{22}{6}=$	$\frac{23}{6}=$
$\frac{27}{6}=$	$\frac{28}{6}=$	$\frac{29}{6}=$
$\frac{33}{6}=$	$\frac{34}{6}=$	$\frac{35}{6}=$
$\frac{39}{6}=$	$\frac{40}{6}=$	$\frac{41}{6}=$
$\frac{45}{6}=$	$\frac{46}{6}=$	$\frac{47}{6}=$
$\frac{51}{6}=$	$\frac{52}{6}=$	$\frac{53}{6}=$
$\frac{57}{6}=$	$\frac{58}{6}=$	$\frac{59}{6}=$
$\frac{63}{6}=$	$\frac{64}{6}=$	$\frac{65}{6}=$
$\frac{69}{6}=$	$\frac{70}{6}=$	$\frac{71}{6}=$
$\frac{75}{6}=$	$\frac{76}{6}=$	$\frac{77}{6}=$

Find $\frac{1}{6}$ of the numbers from 1 to 72.

Ex. $\frac{1}{6}$ of $1=$ $\frac{1}{6}$ of $3=$
$\frac{1}{6}$ of $2=$ $\frac{1}{6}$ of $4=$ etc.

Find $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, $\frac{5}{6}$, and $\frac{6}{6}$ of
6, 12, 18, 24, 30, 36,
42, 48, 54, 60, 66, 72.

Find $\frac{1}{6}$ first each time.

Ex. $\frac{1}{6}$ of $12=$ $\frac{1}{6}$ of $24=$ $\frac{1}{6}$ of $72=$
$\frac{2}{6}$ of $12=$ $\frac{3}{6}$ of $24=$ $\frac{5}{6}$ of $72=$

Find $\frac{6}{6}$ of 1, 4, 6, 7, 9, 24, 47, 71.

1 is $\frac{1}{6}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. Robert spent $\frac{1}{6}$ of his vacation at Nahant. He was there 12 days. How long was his vacation?

2. John found 60 nuts under a tree. He gave Charles $\frac{1}{6}$ of them. How many nuts did he give him? How many nuts did John keep for himself?

3. Frank had 66 apples. He sold $\frac{1}{3}$ of them to Mrs. White, and $\frac{3}{6}$ to Mrs. Black. How many apples did he sell to both? How many apples had he left?

4. Mr. Green divided 42 plums equally among 6 boys. What part of the plums did each boy receive? How many plums?

5. Mrs. Brown had $30. She spent $\frac{1}{2}$ of her money for a dress, and $\frac{1}{6}$ of it for a hat. How many dollars did she pay for both? How many dollars had she left?

6. John had 24 cents and spent $\frac{5}{6}$ of them. How many cents did he spend? How many cents had he left?

7. Cora had 18 chestnuts. She ate $\frac{3}{6}$ of them, and then divided the rest equally among her three brothers. How many nuts did she give to each?

8. Horace bought a dozen eggs for his mother, and she used $\frac{4}{6}$ of them in making a loaf of cake. How many eggs did she use? How many eggs had she left?

9. Frank failed on $\frac{1}{6}$ of 18 words which were given him to spell. How many words had he right?

10. Mrs. French gave Mary $\frac{1}{2}$, and Jennie $\frac{2}{6}$ of 6 dollars. How many dollars did she give to both?

11. Miss Green bought $\frac{5}{6}$ of 54 pencils. How many pencils did she buy?

12. George had 12 peaches. He gave $\frac{1}{6}$ of them to Lucy, and $\frac{1}{3}$ of them to Frank. How many peaches did he give away? How many peaches did he have left?

REVIEW AND BUSY WORK.

$9=\frac{?}{6}$
$4=$
$11=$
$8=$
$5=$
$1=$
$3=$
$6=$
$10=$
$2=$
$7=$
$12=$

$7\frac{1}{2}=\frac{?}{6}$
$9\frac{1}{2}=$
$4\frac{1}{2}=$
$11\frac{1}{2}=$
$8\frac{1}{2}=$
$5\frac{1}{2}=$
$1\frac{1}{2}=$
$3\frac{1}{2}=$
$6\frac{1}{2}=$
$10\frac{1}{2}=$
$2\frac{1}{2}=$

$2\frac{1}{6}=\frac{?}{6}$
$7\frac{1}{6}=$
$9\frac{1}{6}=$
$4\frac{1}{6}=$
$11\frac{1}{6}=$
$8\frac{1}{6}=$
$5\frac{1}{6}=$
$1\frac{1}{6}=$
$3\frac{1}{6}=$
$6\frac{1}{6}=$
$10\frac{1}{6}=$

$10\frac{2}{3}=\frac{?}{6}$
$2\frac{2}{3}=$
$7\frac{2}{3}=$
$9\frac{2}{3}=$
$4\frac{2}{3}=$
$11\frac{2}{3}=$
$8\frac{2}{3}=$
$5\frac{2}{3}=$
$1\frac{2}{3}=$
$3\frac{2}{3}=$
$6\frac{2}{3}=$

$6\frac{1}{3}=\frac{?}{6}$
$10\frac{1}{3}=$
$2\frac{1}{3}=$
$7\frac{1}{3}=$
$9\frac{1}{3}=$
$4\frac{1}{3}=$
$11\frac{1}{3}=$
$8\frac{1}{3}=$
$5\frac{1}{3}=$
$1\frac{1}{3}=$
$3\frac{1}{3}=$

$3\frac{5}{6}=\frac{?}{6}$
$6\frac{5}{6}=$
$10\frac{5}{6}=$
$2\frac{5}{6}=$
$7\frac{5}{6}=$
$9\frac{5}{6}=$
$4\frac{5}{6}=$
$11\frac{5}{6}=$
$8\frac{5}{6}=$
$5\frac{5}{6}=$
$1\frac{5}{6}=$

$\frac{24}{6}=$
$\frac{66}{6}=$
$\frac{48}{6}=$
$\frac{30}{6}=$
$\frac{6}{6}=$
$\frac{18}{6}=$
$\frac{36}{6}=$
$\frac{60}{6}=$
$\frac{12}{6}=$
$\frac{42}{6}=$
$\frac{54}{6}=$
$\frac{72}{6}=$

$\frac{69}{9}=$
$\frac{51}{6}=$
$\frac{88}{6}=$
$\frac{9}{6}=$
$\frac{21}{6}=$
$\frac{39}{6}=$
$\frac{63}{6}=$
$\frac{15}{6}=$
$\frac{45}{6}=$
$\frac{57}{6}=$
$\frac{27}{6}=$

$\frac{49}{6}=$
$\frac{31}{6}=$
$\frac{7}{6}=$
$\frac{19}{6}=$
$\frac{37}{6}=$
$\frac{61}{6}=$
$\frac{13}{6}=$
$\frac{43}{6}=$
$\frac{55}{6}=$
$\frac{25}{6}=$
$\frac{67}{6}=$

$\frac{34}{6}=$
$\frac{10}{6}=$
$\frac{22}{6}=$
$\frac{40}{6}=$
$\frac{64}{6}=$
$\frac{16}{6}=$
$\frac{46}{6}=$
$\frac{58}{6}=$
$\frac{28}{6}=$
$\frac{70}{6}=$
$\frac{52}{6}=$

$\frac{8}{6}=$
$\frac{20}{6}=$
$\frac{38}{6}=$
$\frac{62}{6}=$
$\frac{14}{6}=$
$\frac{44}{6}=$
$\frac{56}{6}=$
$\frac{26}{6}=$
$\frac{68}{6}=$
$\frac{50}{6}=$
$\frac{32}{6}=$

$\frac{28}{6}=$
$\frac{41}{6}=$
$\frac{65}{6}=$
$\frac{17}{6}=$
$\frac{47}{6}=$
$\frac{59}{6}=$
$\frac{29}{6}=$
$\frac{71}{6}=$
$\frac{53}{6}=$
$\frac{35}{6}=$
$\frac{11}{6}=$

Find $\frac{1}{6}$ of

61 7 13 19 28 40
52 2 8 14 41 20
29 53 3 21 9 15
30 62 16 64 72 31
43 57 11 17 44 5
23 32 58 6 12 18
34 46 24 33 59 45
68 26 65 47 67 27
49 37 48 56 36 55
60 10 50 38 51 39
1 42 63 4 22 69
66 35 54 70 25 71

Find $\frac{2}{6}$ of 6, 18, 60, 24, 48, 72,
42, 30, 66, 12, 36, 54.

Find $\frac{4}{6}$ of 24, 48, 66, 12, 72, 60,
36, 42, 18, 54, 30, 6.

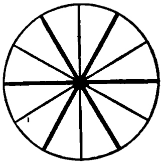
Find $\frac{3}{6}$ of 54, 30, 6, 18, 42, 36,
12, 72, 60, 24, 48, 66.

Find $\frac{5}{6}$ of 54, 36, 12, 66, 48, 72,
42, 30, 6, 18, 60, 24.

How many are $\frac{6}{6}$ of 11, 2, 9, 20, 48, 50,

9 is $\frac{1}{6}$ of what number?
2 " " "
7 " " "
11 " " "
1 " " "
3 " " "
6 " " "
10 " " "
4 " " "
8 " " "
5 " " "
12 " " "

TWELFTHS.

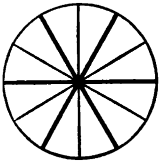


$1=\frac{?}{12}$ $1\frac{1}{12}=\frac{?}{12}$ $1\frac{1}{6}=\frac{?}{12}$ $1\frac{1}{4}=\frac{?}{12}$ $1\frac{1}{3}=\frac{?}{12}$ $1\frac{5}{12}=\frac{?}{12}$

$2=$ $2\frac{1}{12}=$ $2\frac{1}{6}=$ $2\frac{1}{4}=$ $2\frac{1}{3}=$ $2\frac{5}{12}=$

$3=$ $3\frac{1}{12}=$ $3\frac{1}{6}=$ $3\frac{1}{4}=$ $3\frac{1}{3}=$ $3\frac{5}{12}=$

$4=$ $4\frac{1}{12}=$ $4\frac{1}{6}=$ $4\frac{1}{4}=$ $4\frac{1}{3}=$ $4\frac{5}{12}=$

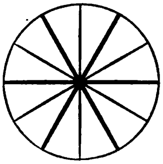


$5=$ $5\frac{1}{12}=$ $5\frac{1}{6}=$ $5\frac{1}{4}=$ $5\frac{1}{3}=$ $5\frac{5}{12}=$

$6=$ $6\frac{1}{12}=$ $6\frac{1}{6}=$ $6\frac{1}{4}=$ $6\frac{1}{3}=$ $6\frac{5}{12}=$

$7=$ $7\frac{1}{12}=$ $7\frac{1}{6}=$ $7\frac{1}{4}=$ $7\frac{1}{3}=$ $7\frac{5}{12}=$

$8=$ $8\frac{1}{12}=$ $8\frac{1}{6}=$ $8\frac{1}{4}=$ $8\frac{1}{3}=$ $8\frac{5}{12}=$

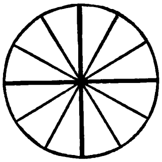


$9=$ $9\frac{1}{12}=$ $9\frac{1}{6}=$ $9\frac{1}{4}=$ $9\frac{1}{3}=$ $9\frac{5}{12}=$

$10=$ $10\frac{1}{12}=$ $10\frac{1}{6}=$ $10\frac{1}{4}=$ $10\frac{1}{3}=$ $10\frac{5}{12}=$

$11=$ $11\frac{1}{12}=$ $11\frac{1}{6}=$ $11\frac{1}{4}=$ $11\frac{1}{3}=$ $11\frac{5}{12}=$

$12=$

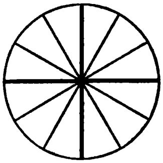


$\frac{12}{12}=$ $\frac{13}{12}=$ $\frac{14}{12}=$ $\frac{15}{12}=$ $\frac{16}{12}=$ $\frac{17}{12}=$

$\frac{24}{12}=$ $\frac{25}{12}=$ $\frac{26}{12}=$ $\frac{27}{12}=$ $\frac{28}{12}=$ $\frac{29}{12}=$

$\frac{36}{12}=$ $\frac{37}{12}=$ $\frac{38}{12}=$ $\frac{39}{12}=$ $\frac{40}{12}=$ $\frac{41}{12}=$

$\frac{48}{12}=$ $\frac{49}{12}=$ $\frac{50}{12}=$ $\frac{51}{12}=$ $\frac{52}{12}=$ $\frac{53}{12}=$

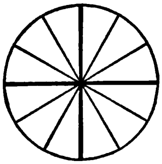


$\frac{60}{12}=$ $\frac{61}{12}=$ $\frac{62}{12}=$ $\frac{63}{12}=$ $\frac{64}{12}=$ $\frac{65}{12}=$

$\frac{72}{12}=$ $\frac{73}{12}=$ $\frac{74}{12}=$ $\frac{75}{12}=$ $\frac{76}{12}=$ $\frac{77}{12}=$

$\frac{84}{12}=$ $\frac{85}{12}=$ $\frac{86}{12}=$ $\frac{87}{12}=$ $\frac{88}{12}=$ $\frac{89}{12}=$

$\frac{96}{12}=$ $\frac{97}{12}=$ $\frac{98}{12}=$ $\frac{99}{12}=$ $\frac{100}{12}=$ $\frac{101}{12}=$



$\frac{108}{12}=$ $\frac{109}{12}=$ $\frac{110}{12}=$ $\frac{111}{12}=$ $\frac{112}{12}=$ $\frac{113}{12}=$

$\frac{120}{12}=$ $\frac{121}{12}=$ $\frac{122}{12}=$ $\frac{123}{12}=$ $\frac{124}{12}=$ $\frac{125}{12}=$

$\frac{132}{12}=$ $\frac{133}{12}=$ $\frac{134}{12}=$ $\frac{135}{12}=$ $\frac{136}{12}=$ $\frac{137}{12}=$

$\frac{144}{12}=$

TWELFTHS.

$1\frac{1}{2}=\frac{?}{12}$ $1\frac{7}{12}=\frac{?}{12}$ $1\frac{2}{3}=\frac{?}{12}$ $1\frac{3}{4}=\frac{?}{12}$ $1\frac{5}{6}=\frac{?}{12}$ $1\frac{11}{12}=\frac{?}{12}$

$2\frac{1}{2}=$ $2\frac{7}{12}=$ $2\frac{2}{3}=$ $2\frac{3}{4}=$ $2\frac{5}{6}=$ $2\frac{11}{12}=$

$3\frac{1}{2}=$ $3\frac{7}{12}=$ $3\frac{2}{3}=$ $3\frac{3}{4}=$ $3\frac{5}{6}=$ $3\frac{11}{12}=$

$4\frac{1}{2}=$ $4\frac{7}{12}=$ $4\frac{2}{3}=$ $4\frac{3}{4}=$ $4\frac{5}{6}=$ $4\frac{11}{12}=$

$5\frac{1}{2}=$ $5\frac{7}{12}=$ $5\frac{2}{3}=$ $5\frac{3}{4}=$ $5\frac{5}{6}=$ $5\frac{11}{12}=$

$6\frac{1}{2}=$ $6\frac{7}{12}=$ $6\frac{2}{3}=$ $6\frac{3}{4}=$ $6\frac{5}{6}=$ $6\frac{11}{12}=$

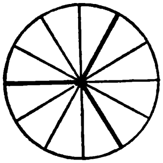
$7\frac{1}{2}=$ $7\frac{7}{12}=$ $7\frac{2}{3}=$ $7\frac{3}{4}=$ $7\frac{5}{6}=$ $7\frac{11}{12}=$

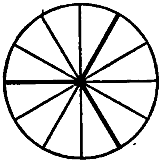
$8\frac{1}{2}=$ $8\frac{7}{12}=$ $8\frac{2}{3}=$ $8\frac{3}{4}=$ $8\frac{5}{6}=$ $8\frac{11}{12}=$

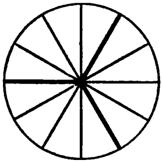
$9\frac{1}{2}=$ $9\frac{7}{12}=$ $9\frac{2}{3}=$ $9\frac{3}{4}=$ $9\frac{5}{6}=$ $9\frac{11}{12}=$

$10\frac{1}{2}=$ $10\frac{7}{12}=$ $10\frac{2}{3}=$ $10\frac{3}{4}=$ $10\frac{5}{6}=$ $10\frac{11}{12}=$

$11\frac{1}{2}=$ $11\frac{7}{12}=$ $11\frac{2}{3}=$ $11\frac{3}{4}=$ $11\frac{5}{6}=$ $11\frac{11}{12}=$







$\frac{18}{12}=$ $\frac{19}{12}=$ $\frac{20}{12}=$ $\frac{21}{12}=$ $\frac{22}{12}=$ $\frac{23}{12}=$

$\frac{30}{12}=$ $\frac{31}{12}=$ $\frac{32}{12}=$ $\frac{33}{12}=$ $\frac{34}{12}=$ $\frac{35}{12}=$

$\frac{42}{12}=$ $\frac{43}{12}=$ $\frac{44}{12}=$ $\frac{45}{12}=$ $\frac{46}{12}=$ $\frac{47}{12}=$

$\frac{54}{12}=$ $\frac{55}{12}=$ $\frac{56}{12}=$ $\frac{57}{12}=$ $\frac{58}{12}=$ $\frac{59}{12}=$

$\frac{66}{12}=$ $\frac{67}{12}=$ $\frac{68}{12}=$ $\frac{69}{12}=$ $\frac{70}{12}=$ $\frac{71}{12}=$

$\frac{78}{12}=$ $\frac{79}{12}=$ $\frac{80}{12}=$ $\frac{81}{12}=$ $\frac{82}{12}=$ $\frac{83}{12}=$

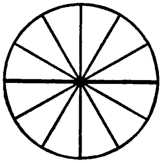
$\frac{90}{12}=$ $\frac{91}{12}=$ $\frac{92}{12}=$ $\frac{93}{12}=$ $\frac{94}{12}=$ $\frac{95}{12}=$

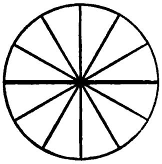
$\frac{102}{12}=$ $\frac{103}{12}=$ $\frac{104}{12}=$ $\frac{105}{12}=$ $\frac{106}{12}=$ $\frac{107}{12}=$

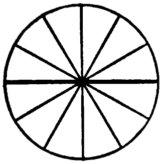
$\frac{114}{12}=$ $\frac{115}{12}=$ $\frac{116}{12}=$ $\frac{117}{12}=$ $\frac{118}{12}=$ $\frac{119}{12}=$

$\frac{126}{12}=$ $\frac{127}{12}=$ $\frac{128}{12}=$ $\frac{129}{12}=$ $\frac{130}{12}=$ $\frac{131}{12}=$

$\frac{138}{12}=$ $\frac{139}{12}=$ $\frac{140}{12}=$ $\frac{141}{12}=$ $\frac{142}{12}=$ $\frac{143}{12}=$







Find $\frac{1}{12}$ of numbers from 1 to 144.

Ex. $\frac{1}{12}$ of $1=?$ $\frac{1}{12}$ of $2=?$ $\frac{1}{12}$ of $3=?$ $\frac{1}{12}$ of $4=?$ etc.

Find $\frac{2}{12}$, $\frac{3}{12}$, $\frac{4}{12}$, $\frac{5}{12}$, $\frac{6}{12}$, $\frac{7}{12}$, $\frac{8}{12}$, $\frac{9}{12}$, $\frac{10}{12}$, and $\frac{11}{12}$ of

12, 24, 36, 48, 60, 72,
84, 96, 108, 120, 132, 144.

Find $\frac{1}{12}$ first each time.

Ex. $\frac{1}{12}$ of $12=?$ $\frac{1}{12}$ of $24=?$ $\frac{1}{12}$ of $36=?$
$\frac{2}{12}$ of $12=?$ $\frac{2}{12}$ of $24=?$ $\frac{2}{22}$ of $36=?$ etc.

How many are $\frac{12}{12}$ of

4, 7, 17, 26,
35, 47, 58, 104.

1 is $\frac{1}{12}$ of what number?
2 " " "
3 " " "
4 " " "
5 " " "
6 " " "
7 " " "
8 " " "
9 " " "
10 " " "
11 " " "
12 " " "

1. George's father caught 144 fish, and George caught $\frac{1}{12}$ as many. How many fish did George catch?

2. Julia can spell $\frac{7}{12}$ of 96 words. How many words can she spell?

3. To how many children can Lucy give 5 apples, if she has $\frac{5}{12}$ of 36 apples?

4. To how many boys can John give $\frac{1}{12}$ of a melon, if he has $1\frac{1}{2}$ melons?

5. Sally cut $3\frac{2}{3}$ pies into twelfths. How many twelfths had she?

6. Mr. Allen had 132 horses. He sold $\frac{5}{12}$ of them to one man, and $\frac{1}{6}$ to another. How many horses did he sell?

7. Horace counted 48 panes of glass in a house. $\frac{1}{12}$ of of them were in each window. How many panes were in each window?

8. Clara is $\frac{2}{12}$ as old as her mother, who is 36 years old. What is Clara's age?

9. Edgar broke $\frac{3}{12}$ of 36 eggs. How many eggs did he break?

10. Harold travelled 60 miles. He went $\frac{9}{12}$ of the distance in the cars, and the remainder in a steamboat. How many miles did he travel by boat?

11. If one orange cost $\frac{1}{12}$ of 72 cents, what will 5 oranges cost?

12. How many loaves of bread can be bought for 42 cents, if each loaf is worth $\frac{2}{12}$ of 36 cents?

13. If Harold saves $\frac{2}{12}$ of 60 cents each week, how long will it take him to save a dollar?

14. Mrs. Cole had 4 dozen eggs, and used $\frac{3}{12}$ of them in making some cake. How many eggs did she use? How many eggs did she have left?

REVIEW AND BUSY WORK.

$5=\frac{?}{12}$
$7=$
$2=$
$6=$
$10=$
$3=$
$8=$
$11=$
$4=$
$9=$
$1=$
$12=$

$7\frac{1}{12}=\frac{?}{12}$
$2\frac{1}{12}=$
$6\frac{1}{12}=$
$10\frac{1}{12}=$
$3\frac{1}{12}=$
$8\frac{1}{12}=$
$11\frac{1}{12}=$
$4\frac{1}{12}=$
$9\frac{1}{12}=$
$1\frac{1}{12}=$
$5\frac{1}{12}=$

$2\frac{1}{6}=\frac{?}{12}$
$6\frac{1}{6}=$
$10\frac{1}{6}=$
$3\frac{1}{6}=$
$8\frac{1}{6}=$
$11\frac{1}{6}=$
$4\frac{1}{6}=$
$9\frac{1}{6}=$
$1\frac{1}{6}=$
$5\frac{1}{6}=$
$7\frac{1}{6}=$

$6\frac{1}{2}=\frac{?}{12}$
$10\frac{1}{2}=$
$3\frac{1}{2}=$
$8\frac{1}{2}=$
$11\frac{1}{2}=$
$4\frac{1}{2}=$
$9\frac{1}{2}=$
$1\frac{1}{2}=$
$5\frac{1}{2}=$
$7\frac{1}{2}=$
$2\frac{1}{2}=$

$10\frac{1}{4}=\frac{?}{12}$
$3\frac{1}{4}=$
$8\frac{1}{4}=$
$11\frac{1}{4}=$
$4\frac{1}{4}=$
$9\frac{1}{4}=$
$1\frac{1}{4}=$
$5\frac{1}{4}=$
$7\frac{1}{4}=$
$2\frac{1}{4}=$
$6\frac{1}{4}=$

$3\frac{7}{12}=\frac{?}{12}$
$8\frac{7}{12}=$
$11\frac{7}{12}=$
$4\frac{7}{12}=$
$9\frac{7}{12}=$
$1\frac{7}{12}=$
$5\frac{7}{12}=$
$7\frac{7}{12}=$
$2\frac{7}{12}=$
$6\frac{7}{12}=$
$10\frac{7}{12}=$

$\frac{12}{12}=$
$\frac{60}{12}=$
$\frac{84}{12}=$
$\frac{24}{12}=$
$\frac{72}{12}=$
$\frac{120}{12}=$
$\frac{36}{12}=$
$\frac{96}{12}=$
$\frac{132}{12}=$
$\frac{48}{12}=$
$\frac{108}{12}=$
$\frac{144}{12}=$

$\frac{109}{12}=$
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$\frac{61}{12}=$
$\frac{85}{12}=$
$\frac{25}{12}=$
$\frac{73}{12}=$
$\frac{121}{12}=$
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$\frac{97}{12}=$
$\frac{138}{12}=$
$\frac{49}{12}=$

$\frac{50}{12}=$
$\frac{110}{12}=$
$\frac{14}{12}=$
$\frac{62}{12}=$
$\frac{86}{12}=$
$\frac{26}{12}=$
$\frac{74}{12}=$
$\frac{122}{12}=$
$\frac{38}{12}=$
$\frac{98}{12}=$
$\frac{134}{12}=$

$\frac{138}{12}=$
$\frac{54}{12}=$
$\frac{114}{12}=$
$\frac{18}{12}=$
$\frac{66}{12}=$
$\frac{90}{12}=$
$\frac{30}{12}=$
$\frac{78}{12}=$
$\frac{126}{12}=$
$\frac{42}{12}=$
$\frac{102}{12}=$

$\frac{99}{12}=$
$\frac{135}{12}=$
$\frac{51}{12}=$
$\frac{111}{12}=$
$\frac{15}{12}=$
$\frac{63}{12}=$
$\frac{87}{12}=$
$\frac{27}{12}=$
$\frac{75}{12}=$
$\frac{128}{12}=$
$\frac{39}{12}=$

$\frac{43}{12}=$
$\frac{103}{12}=$
$\frac{139}{12}=$
$\frac{55}{12}=$
$\frac{115}{12}=$
$\frac{19}{12}=$
$\frac{67}{12}=$
$\frac{91}{12}=$
$\frac{31}{12}=$
$\frac{79}{12}=$
$\frac{127}{12}=$

REVIEW AND BUSY WORK.

$8\frac{1}{3}=\frac{?}{12}$
$11\frac{1}{3}=$
$4\frac{1}{3}=$
$9\frac{1}{3}=$
$1\frac{1}{3}=$
$5\frac{1}{3}=$
$7\frac{1}{3}=$
$2\frac{1}{3}=$
$6\frac{1}{3}=$
$10\frac{1}{3}=$
$3\frac{1}{3}=$

$11\frac{3}{4}=\frac{?}{12}$
$4\frac{3}{4}=$
$9\frac{3}{4}=$
$1\frac{3}{4}=$
$5\frac{3}{4}=$
$7\frac{3}{4}=$
$2\frac{3}{4}=$
$6\frac{3}{4}=$
$10\frac{3}{4}=$
$3\frac{3}{4}=$
$8\frac{3}{4}=$

$4\frac{5}{6}=\frac{?}{12}$
$9\frac{5}{6}=$
$1\frac{5}{6}=$
$5\frac{5}{6}=$
$7\frac{5}{6}=$
$2\frac{5}{6}=$
$6\frac{5}{6}=$
$10\frac{5}{6}=$
$3\frac{5}{6}=$
$8\frac{5}{6}=$
$11\frac{5}{6}=$

$9\frac{2}{3}=\frac{?}{12}$
$1\frac{2}{3}=$
$5\frac{2}{3}=$
$7\frac{2}{3}=$
$2\frac{2}{3}=$
$6\frac{2}{3}=$
$10\frac{2}{3}=$
$3\frac{2}{3}=$
$8\frac{2}{3}=$
$11\frac{2}{3}=$
$4\frac{2}{3}=$

$1\frac{5}{12}=\frac{?}{12}$
$5\frac{5}{12}=$
$7\frac{5}{12}=$
$2\frac{5}{12}=$
$6\frac{5}{12}=$
$10\frac{5}{12}=$
$3\frac{5}{12}=$
$8\frac{5}{12}=$
$11\frac{5}{12}=$
$4\frac{5}{12}=$
$9\frac{5}{12}=$

$5\frac{11}{12}=\frac{?}{12}$
$7\frac{11}{12}=$
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$6\frac{11}{12}=$
$10\frac{11}{12}=$
$3\frac{11}{12}=$
$8\frac{11}{12}=$
$11\frac{11}{12}=$
$4\frac{11}{12}=$
$9\frac{11}{12}=$
$1\frac{11}{12}=$

$\frac{124}{12}=$
$\frac{40}{12}=$
$\frac{100}{12}=$
$\frac{136}{12}=$
$\frac{52}{12}=$
$\frac{112}{12}=$
$\frac{16}{12}=$
$\frac{64}{12}=$
$\frac{88}{12}=$
$\frac{28}{12}=$
$\frac{76}{12}=$

$\frac{81}{12}=$
$\frac{129}{12}=$
$\frac{45}{12}=$
$\frac{105}{12}=$
$\frac{141}{12}=$
$\frac{57}{12}=$
$\frac{117}{12}=$
$\frac{21}{12}=$
$\frac{69}{12}=$
$\frac{93}{12}=$
$\frac{33}{12}=$

$\frac{34}{12}=$
$\frac{82}{12}=$
$\frac{130}{12}=$
$\frac{46}{12}=$
$\frac{106}{12}=$
$\frac{142}{12}=$
$\frac{58}{13}=$
$\frac{118}{12}=$
$\frac{22}{12}=$
$\frac{70}{12}=$
$\frac{94}{12}=$

$\frac{92}{12}=$
$\frac{32}{12}=$
$\frac{80}{12}=$
$\frac{128}{12}=$
$\frac{44}{12}=$
$\frac{104}{12}=$
$\frac{140}{12}=$
$\frac{56}{12}=$
$\frac{116}{12}=$
$\frac{20}{12}=$
$\frac{68}{12}=$

$\frac{65}{12}=$
$\frac{89}{12}=$
$\frac{29}{12}=$
$\frac{77}{12}=$
$\frac{125}{12}=$
$\frac{41}{12}=$
$\frac{101}{12}=$
$\frac{137}{12}=$
$\frac{53}{12}=$
$\frac{113}{12}=$
$\frac{17}{12}=$

$\frac{23}{12}=$
$\frac{71}{12}=$
$\frac{95}{12}=$
$\frac{35}{12}=$
$\frac{83}{12}=$
$\frac{131}{12}=$
$\frac{47}{12}=$
$\frac{107}{12}=$
$\frac{143}{12}=$
$\frac{59}{12}=$
$\frac{119}{12}=$

REVIEW AND BUSY WORK.

Find $\frac{1}{12}$ of:

24
1
84
37
60
14
117
23
129
45
133
128
66
13
113
58
86
6
105
43
96
142
80
53

134
100
38
91
19
75
48
116
27
72
54
31
118
67
139
114
59
87
7
106
44
97
25
81

82
2
101
39
92
20
76
49
135
28
73
143
32
119
68
15
123
138
88
8
107
137
98
26

55
83
3
102
40
93
21
77
50
130
29
74
126
33
120
69
16
115
61
89
9
108
46
99

111
56
36
4
103
41
94
22
78
51
132
30
64
127
34
121
70
17
124
62
90
10
109
47

12
112
57
85
5
104
42
95
136
79
52
131
140
65
144
35
122
71
141
18
63
110
11
125

Find:

$\frac{3}{12}$ of 12, 84, 48, 96, 24, 108, 60, 120, 36, 144, 72, 132.

$\frac{9}{12}$ of 96, 24, 108, 60, 120, 36, 144, 72, 132, 12, 84, 48.

$\frac{2}{12}$ of 144, 72, 132, 12, 84, 48, 96, 24, 108, 60, 120, 36.

$\frac{7}{12}$ of 12, 96, 60, 144, 84, 24, 120, 72, 48, 108, 36, 132.

$\frac{4}{12}$ of 84, 24, 120, 72, 12, 96, 60, 144, 48, 108, 36, 132.

$\frac{11}{12}$ of 144, 60, 96, 12, 72, 120, 24, 84, 132, 36, 108, 48.

$\frac{6}{12}$ of 72, 120, 24, 84, 132, 36, 108, 48, 144, 60, 96, 12.

$\frac{8}{12}$ of 132, 36, 108, 48, 144, 60, 96, 12, 72, 120, 24, 84.

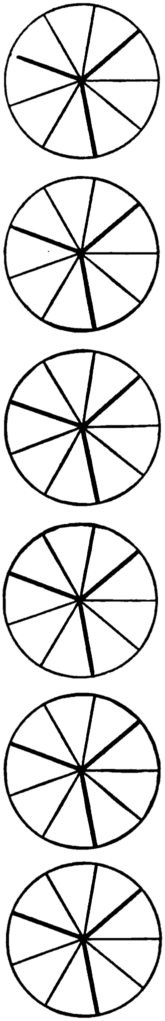
$\frac{5}{12}$ of 108, 24, 96, 48, 84, 12, 36, 120, 60, 132, 72, 144.

$\frac{10}{12}$ of 132, 72, 144, 36, 120, 60, 108, 48, 24, 84, 12, 96.

How many are $\frac{12}{12}$ of 4, 11, 99, 17, 61, 57, 133, 101, 92, 48, 53.

7 is $\frac{1}{12}$ of what number?
4 “ “ “
1 “ “ “
12 “ “ “
9 “ “ “
3 “ “ “
2 “ “ “
5 “ “ “
10 “ “ “
6 “ “ “
11 “ “ “
8 “ “ “

NINTHS.



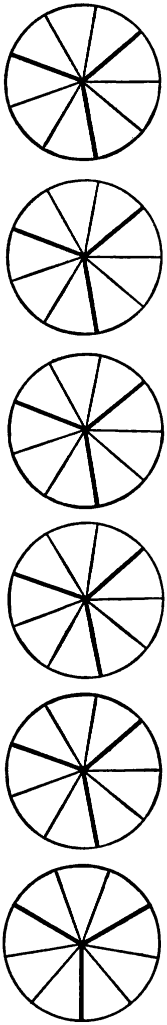
$1=\frac{?}{9}$	$1\frac{1}{9}=\frac{?}{9}$	$1\frac{2}{9}=\frac{?}{9}$	$1\frac{1}{3}=\frac{?}{9}$	$1\frac{4}{9}=\frac{?}{9}$
$2=$	$2\frac{1}{9}=$	$2\frac{2}{9}=$	$2\frac{1}{3}=$	$2\frac{4}{9}=$
$3=$	$3\frac{1}{9}=$	$3\frac{2}{9}=$	$3\frac{1}{3}=$	$3\frac{4}{9}=$
$4=$	$4\frac{1}{9}=$	$4\frac{2}{9}=$	$4\frac{1}{3}=$	$4\frac{4}{9}=$
$5=$	$5\frac{1}{9}=$	$5\frac{2}{9}=$	$5\frac{1}{3}=$	$5\frac{4}{9}=$
$6=$	$6\frac{1}{9}=$	$6\frac{2}{9}=$	$6\frac{1}{3}=$	$6\frac{4}{9}=$
$7=$	$7\frac{1}{9}=$	$7\frac{2}{9}=$	$7\frac{1}{3}=$	$7\frac{4}{9}=$
$8=$	$8\frac{1}{9}=$	$8\frac{2}{9}=$	$8\frac{1}{3}=$	$8\frac{4}{9}=$
$9=$	$9\frac{1}{9}=$	$9\frac{2}{9}=$	$9\frac{1}{3}=$	$9\frac{4}{9}=$
$10=$	$10\frac{1}{9}=$	$10\frac{2}{9}=$	$10\frac{1}{3}=$	$10\frac{4}{9}=$
$11=$	$11\frac{1}{9}=$	$11\frac{2}{9}=$	$11\frac{1}{3}=$	$11\frac{4}{9}=$
$12=$				

$\frac{9}{9}=$	$\frac{10}{9}=$	$\frac{11}{9}=$	$\frac{12}{9}=$	$\frac{13}{9}=$
$\frac{18}{9}=$	$\frac{19}{9}=$	$\frac{20}{9}=$	$\frac{21}{9}=$	$\frac{22}{9}=$
$\frac{27}{9}=$	$\frac{28}{9}=$	$\frac{29}{9}=$	$\frac{30}{9}=$	$\frac{31}{9}=$
$\frac{36}{9}=$	$\frac{37}{9}=$	$\frac{38}{9}=$	$\frac{39}{9}=$	$\frac{40}{9}=$
$\frac{45}{9}=$	$\frac{46}{9}=$	$\frac{47}{9}=$	$\frac{48}{9}=$	$\frac{49}{9}=$
$\frac{54}{9}=$	$\frac{55}{9}=$	$\frac{56}{9}=$	$\frac{57}{9}=$	$\frac{58}{9}=$
$\frac{63}{9}=$	$\frac{64}{9}=$	$\frac{65}{9}=$	$\frac{66}{9}=$	$\frac{67}{9}=$
$\frac{72}{9}=$	$\frac{73}{9}=$	$\frac{74}{9}=$	$\frac{75}{9}=$	$\frac{76}{9}=$
$\frac{81}{9}=$	$\frac{82}{9}=$	$\frac{83}{9}=$	$\frac{84}{9}=$	$\frac{85}{9}=$
$\frac{90}{9}=$	$\frac{91}{9}=$	$\frac{92}{9}=$	$\frac{93}{9}=$	$\frac{94}{9}=$
$\frac{99}{9}=$	$\frac{100}{9}=$	$\frac{101}{9}=$	$\frac{102}{9}=$	$\frac{103}{9}=$
$\frac{108}{9}=$				

NINTHS.

$1\frac{5}{9}=\frac{?}{9}$ $1\frac{2}{3}=\frac{?}{9}$ $1\frac{7}{9}=\frac{?}{9}$ $1\frac{8}{9}=\frac{?}{9}$
$2\frac{5}{9}=$ $2\frac{2}{3}=$ $2\frac{7}{9}=$ $2\frac{8}{9}=$
$3\frac{5}{9}=$ $3\frac{2}{3}=$ $3\frac{7}{9}=$ $3\frac{8}{9}=$
$4\frac{5}{9}=$ $4\frac{2}{3}=$ $4\frac{7}{9}=$ $4\frac{8}{9}=$
$5\frac{5}{9}=$ $5\frac{2}{3}=$ $5\frac{7}{9}=$ $5\frac{8}{9}=$
$6\frac{5}{9}=$ $6\frac{2}{3}=$ $6\frac{7}{9}=$ $6\frac{8}{9}=$
$7\frac{5}{9}=$ $7\frac{2}{3}=$ $7\frac{7}{9}=$ $7\frac{8}{9}=$
$8\frac{5}{9}=$ $8\frac{2}{3}=$ $8\frac{7}{9}=$ $8\frac{8}{9}=$
$9\frac{5}{9}=$ $9\frac{2}{3}=$ $9\frac{7}{9}=$ $9\frac{8}{9}=$
$10\frac{5}{9}=$ $10\frac{2}{3}=$ $10\frac{7}{9}=$ $10\frac{8}{9}=$
$11\frac{5}{9}=$ $11\frac{2}{3}=$ $11\frac{7}{9}=$ $11\frac{8}{9}=$

$\frac{14}{9}=$ $\frac{15}{9}=$ $\frac{16}{9}=$ $\frac{17}{9}=$
$\frac{23}{9}=$ $\frac{24}{9}=$ $\frac{25}{9}=$ $\frac{26}{9}=$
$\frac{32}{9}=$ $\frac{33}{9}=$ $\frac{34}{9}=$ $\frac{35}{9}=$
$\frac{41}{9}=$ $\frac{42}{9}=$ $\frac{43}{9}=$ $\frac{44}{9}=$
$\frac{50}{9}=$ $\frac{51}{9}=$ $\frac{52}{9}=$ $\frac{53}{9}=$
$\frac{59}{9}=$ $\frac{60}{9}=$ $\frac{61}{9}=$ $\frac{62}{9}=$
$\frac{68}{9}=$ $\frac{69}{9}=$ $\frac{70}{9}=$ $\frac{71}{9}=$
$\frac{77}{9}=$ $\frac{78}{9}=$ $\frac{79}{9}=$ $\frac{80}{9}=$
$\frac{86}{9}=$ $\frac{87}{9}=$ $\frac{88}{9}=$ $\frac{89}{9}=$
$\frac{95}{9}=$ $\frac{96}{9}=$ $\frac{97}{9}=$ $\frac{98}{9}=$
$\frac{104}{9}=$ $\frac{105}{9}=$ $\frac{106}{9}=$ $\frac{107}{9}=$



Find $\frac{1}{9}$ of numbers from 1 to 108.

Ex. $\frac{1}{9}$ of $1 = ?$
$\frac{1}{9}$ of $2 = ?$
$\frac{1}{9}$ of $3 = ?$
$\frac{1}{9}$ of $4 = ?$
$\frac{1}{9}$ of $5 = ?$
$\frac{1}{9}$ of $6 = ?$
$\frac{1}{9}$ of $7 = ?$
$\frac{1}{9}$ of $8 = ?$

Find $\frac{2}{9}$, $\frac{3}{9}$, $\frac{4}{9}$, $\frac{5}{9}$, $\frac{6}{9}$, $\frac{7}{9}$, and $\frac{8}{9}$ of 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, and 108.

Find first $\frac{1}{9}$ each time.

Ex. $\frac{1}{9}$ of $9 = ?$
$\frac{2}{9}$ of $9 = ?$
$\frac{1}{9}$ of $18 = ?$
$\frac{2}{9}$ of $18 = ?$
$\frac{1}{9}$ of $27 = ?$
$\frac{2}{9}$ of $27 = ?$
$\frac{1}{9}$ of $36 = ?$
$\frac{2}{9}$ of $36 = ?$

1 is $\frac{1}{9}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. Gertrude divided 72 nuts among her schoolmates, giving $\frac{1}{9}$ to each. How many nuts did each receive?

2. John spent $\frac{1}{9}$ of the money he had saved for a ball. If the ball cost 8 cents, how many cents had he saved?

3. Carl had 108 papers and sold $\frac{8}{9}$ of them. How many papers did he sell? How many papers did he not sell?

4. Jane picked up 45 shells and gave $\frac{4}{9}$ of them to her brother. How many shells did she give to him, and how many shells had she left?

5. Mr. Hall gave Martha $\frac{1}{3}$, and Harry $\frac{3}{9}$ of 27 cents. How many cents did he give to each? How many to both?

6. Fannie divided $\frac{4}{9}$ of 63 plums equally among her 4 brothers. How many plums did she give to each?

7. Last Monday James earned $\frac{2}{9}$ of 54 cents, and on Tuesday $\frac{3}{9}$ of 45 cents. How many cents did he earn in the 2 days?

8. Mr. Green had 99 sheep. He sold $\frac{4}{9}$ of them to Mr. Arnold, and $\frac{3}{9}$ of them to Mr. Bird. How many sheep did he sell in all? How many more sheep did he sell to one than to the other?

9. If Lucy eats $\frac{1}{9}$ of 18 apples every day, how many apples will she eat in 5 days?

10. If Carrie failed on $\frac{1}{9}$ of 27 words, how many words did she have right?

11. Mr. Stone gave 19 boys each $\frac{1}{9}$ of a melon. How many melons did he give away?

12. Grace cut $7\frac{1}{3}$ peaches into ninths. How many ninths had she?

13. Which would you rather have; a quarter of a dollar, or $\frac{2}{9}$ of 108 cents?

14. Mrs. Lucas bought $\frac{3}{9}$ of 36 oranges at 2 cents apiece. How many cents did she pay for the oranges?

REVIEW AND BUSY WORK.

$1=\frac{?}{9}$
$9=$
$4=$
$11=$
$8=$
$3=$
$10=$
$6=$
$2=$
$7=$
$5=$
$12=$

$5\frac{5}{9}=\frac{?}{9}$
$1\frac{5}{9}=$
$9\frac{5}{9}=$
$4\frac{5}{9}=$
$11\frac{5}{9}=$
$8\frac{5}{9}=$
$3\frac{5}{9}=$
$10\frac{5}{9}=$
$6\frac{5}{9}=$
$2\frac{5}{9}=$
$7\frac{5}{9}=$

$7\frac{1}{9}=\frac{?}{9}$
$5\frac{1}{9}=$
$1\frac{1}{9}=$
$9\frac{1}{9}=$
$4\frac{1}{9}=$
$11\frac{1}{9}=$
$8\frac{1}{9}=$
$3\frac{1}{9}=$
$10\frac{1}{9}=$
$6\frac{1}{9}=$
$2\frac{1}{9}=$

$2\frac{2}{3}=\frac{?}{9}$
$7\frac{2}{3}=$
$5\frac{2}{3}=$
$1\frac{2}{3}=$
$9\frac{2}{3}=$
$4\frac{2}{3}=$
$11\frac{2}{3}=$
$8\frac{2}{3}=$
$3\frac{2}{3}=$
$10\frac{2}{3}=$
$6\frac{2}{3}=$

$6\frac{2}{9}=\frac{?}{9}$
$2\frac{2}{9}=$
$7\frac{2}{9}=$
$5\frac{2}{9}=$
$1\frac{2}{9}=$
$9\frac{2}{9}=$
$4\frac{2}{9}=$
$11\frac{2}{9}=$
$8\frac{2}{9}=$
$3\frac{2}{9}=$
$10\frac{2}{9}=$

$\frac{81}{9}=$
$\frac{36}{9}=$
$\frac{99}{9}=$
$\frac{72}{9}=$
$\frac{27}{9}=$
$\frac{90}{9}=$
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$\frac{18}{9}=$
$\frac{63}{9}=$
$\frac{45}{9}=$
$\frac{9}{9}=$
$\frac{108}{9}=$

$\frac{41}{9}=$
$\frac{104}{9}=$
$\frac{77}{9}=$
$\frac{32}{9}=$
$\frac{95}{9}=$
$\frac{59}{9}=$
$\frac{28}{9}=$
$\frac{68}{9}=$
$\frac{50}{9}=$
$\frac{14}{9}=$
$\frac{86}{9}=$

$\frac{100}{9}=$
$\frac{73}{9}=$
$\frac{28}{9}=$
$\frac{91}{9}=$
$\frac{55}{9}=$
$\frac{19}{9}=$
$\frac{64}{9}=$
$\frac{46}{9}=$
$\frac{10}{9}=$
$\frac{32}{9}=$
$\frac{37}{9}=$

$\frac{78}{9}=$
$\frac{33}{9}=$
$\frac{96}{9}=$
$\frac{60}{9}=$
$\frac{24}{9}=$
$\frac{69}{9}=$
$\frac{51}{9}=$
$\frac{15}{9}=$
$\frac{87}{9}=$
$\frac{42}{9}=$
$\frac{105}{9}=$

$\frac{29}{9}=$
$\frac{92}{9}=$
$\frac{56}{9}=$
$\frac{20}{9}=$
$\frac{65}{9}=$
$\frac{47}{9}=$
$\frac{11}{9}=$
$\frac{83}{9}=$
$\frac{88}{9}=$
$\frac{101}{9}=$
$\frac{74}{9}=$

REVIEW AND BUSY WORK.

$10\frac{1}{3}=\frac{?}{9}$
$6\frac{1}{3}=$
$2\frac{1}{3}=$
$7\frac{1}{3}=$
$5\frac{1}{3}=$
$1\frac{1}{3}=$
$9\frac{1}{3}=$
$4\frac{1}{3}=$
$11\frac{1}{3}=$
$8\frac{1}{3}=$
$3\frac{1}{3}=$

$3\frac{7}{9}=\frac{?}{9}$
$10\frac{7}{9}=$
$6\frac{7}{9}=$
$2\frac{7}{9}=$
$7\frac{7}{9}=$
$5\frac{7}{9}=$
$1\frac{7}{9}=$
$9\frac{7}{9}=$
$4\frac{7}{9}=$
$11\frac{7}{9}=$
$8\frac{7}{9}=$

$8\frac{4}{9}=\frac{?}{9}$
$3\frac{4}{9}=$
$10\frac{4}{9}=$
$6\frac{4}{9}=$
$2\frac{4}{9}=$
$7\frac{4}{9}=$
$5\frac{4}{9}=$
$1\frac{4}{9}=$
$9\frac{4}{9}=$
$4\frac{4}{9}=$
$11\frac{4}{9}=$

$11\frac{8}{9}=\frac{?}{9}$
$8\frac{8}{9}=$
$3\frac{8}{9}=$
$10\frac{8}{9}=$
$6\frac{8}{9}=$
$2\frac{8}{9}=$
$7\frac{8}{9}=$
$5\frac{8}{9}=$
$1\frac{8}{9}=$
$9\frac{8}{9}=$
$4\frac{8}{9}=$

$\frac{93}{9}=$
$\frac{57}{9}=$
$\frac{21}{9}=$
$\frac{66}{9}=$
$\frac{48}{9}=$
$\frac{12}{9}=$
$\frac{84}{9}=$
$\frac{39}{9}=$
$\frac{102}{9}=$
$\frac{75}{9}=$
$\frac{30}{9}=$

$\frac{61}{9}=$
$\frac{25}{9}=$
$\frac{70}{9}=$
$\frac{52}{9}=$
$\frac{16}{9}=$
$\frac{88}{9}=$
$\frac{43}{9}=$
$\frac{106}{9}=$
$\frac{79}{9}=$
$\frac{34}{9}=$
$\frac{97}{9}=$

$\frac{22}{9}=$
$\frac{67}{9}=$
$\frac{49}{9}=$
$\frac{13}{9}=$
$\frac{85}{9}=$
$\frac{40}{9}=$
$\frac{103}{9}=$
$\frac{76}{9}=$
$\frac{31}{9}=$
$\frac{94}{9}=$
$\frac{58}{9}=$

$\frac{71}{9}=$
$\frac{53}{9}=$
$\frac{17}{9}=$
$\frac{89}{9}=$
$\frac{44}{9}=$
$\frac{107}{9}=$
$\frac{80}{9}=$
$\frac{35}{9}=$
$\frac{98}{9}=$
$\frac{62}{9}=$
$\frac{26}{9}=$

Find $\frac{1}{9}$ of:

10
96
43
103
20
81
54
80
9
59
97
42
90
11
83
44
95
21
79
108
70
104
41
26
60
84
12

98
45
93
7
69
55
40
27
58
31
61
78
13
82
6
71
22
39
28
101
8
85
32
53
94
5
68

46
38
23
106
56
91
107
52
33
4
67
14
37
48
72
24
105
57
51
77
3
34
62
36
15
92
47

73
25
19
86
2
66
76
35
29
63
16
89
49
18
74
65
75
87
30
100
88
64
17
99
50
102
1

Find $\frac{3}{9}$ of 18, 63, 9, 72, 27, 81, 36, 90, 45, 99, 54, and 108.

Find $\frac{5}{9}$ of 108, 54, 99, 45, 90, 36, 81, 27, 72, 9, 63, and 18.

Find $\frac{8}{9}$ of 9, 63, 18, 81, 27, 72, 45, 90, 36, 108, 54, and 99.

Find $\frac{2}{9}$ of 54, 99, 36, 90, 45, 108, 81, 9, 27, 63, 72, and 18.

Find $\frac{6}{9}$ of 99, 36, 54, 90, 108, 45, 81, 9, 27, 63, 18, and 72.

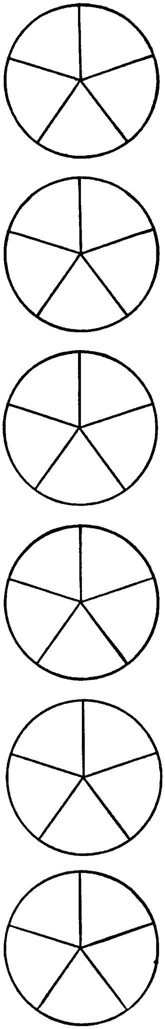
Find $\frac{4}{9}$ of 9, 81, 63, 27, 18, 72, 36, 99, 90, 54, 45, and 108.

Find $\frac{7}{9}$ of 18, 36, 63, 90, 9, 45, 72, 99, 27, 54, 81, and 108.

How many are $\frac{9}{9}$ of 1, 14, 37, 100, 64, 36, 22, 63, and 97.

7 is $\frac{1}{9}$ of what number?
9 " " "
12 " " "
2 " " "
5 " " "
10 " " "
1 " " "
6 " " "
3 " " "
8 " " "
4 " " "
11 " " "

FIFTHS.



$1=\frac{?}{5}$	$1\frac{1}{5}=\frac{?}{5}$	$1\frac{2}{5}=\frac{?}{5}$
$2=$	$2\frac{1}{5}=$	$2\frac{2}{5}=$
$3=$	$3\frac{1}{5}=$	$3\frac{2}{5}=$
$4=$	$4\frac{1}{5}=$	$4\frac{2}{5}=$
$5=$	$5\frac{1}{5}=$	$5\frac{2}{5}=$
$6=$	$6\frac{1}{5}=$	$6\frac{2}{5}=$
$7=$	$7\frac{1}{5}=$	$7\frac{2}{5}=$
$8=$	$8\frac{1}{5}=$	$8\frac{2}{5}=$
$9=$	$9\frac{1}{5}=$	$9\frac{2}{5}=$
$10=$	$10\frac{1}{5}=$	$10\frac{2}{5}=$
$11=$	$11\frac{1}{5}=$	$11\frac{2}{5}=$
$12=$		
$\frac{5}{5}=$	$\frac{6}{5}=$	$\frac{7}{5}=$
$\frac{10}{5}=$	$\frac{11}{5}=$	$\frac{12}{5}=$
$\frac{15}{5}=$	$\frac{16}{5}=$	$\frac{17}{5}=$
$\frac{20}{5}=$	$\frac{21}{5}=$	$\frac{22}{5}=$
$\frac{25}{5}=$	$\frac{26}{5}=$	$\frac{27}{5}=$
$\frac{30}{5}=$	$\frac{31}{5}=$	$\frac{32}{5}=$
$\frac{35}{5}=$	$\frac{36}{5}=$	$\frac{37}{5}=$
$\frac{40}{5}=$	$\frac{41}{5}=$	$\frac{42}{5}=$
$\frac{45}{5}=$	$\frac{46}{5}=$	$\frac{47}{5}=$
$\frac{50}{5}=$	$\frac{51}{5}=$	$\frac{52}{5}=$
$\frac{55}{5}=$	$\frac{56}{5}=$	$\frac{57}{5}=$
$\frac{60}{5}=$		

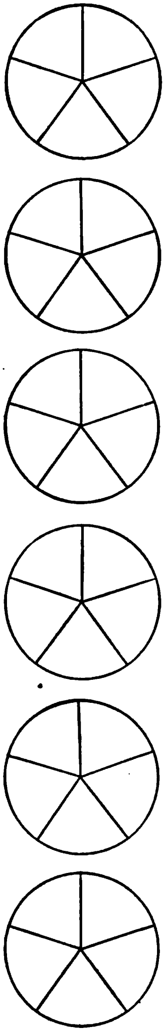
FIFTHS.

$1\frac{3}{5}=\frac{?}{5}$
$2\frac{3}{5}=$
$3\frac{3}{5}=$
$4\frac{3}{5}=$
$5\frac{3}{5}=$
$6\frac{3}{5}=$
$7\frac{3}{5}=$
$8\frac{3}{5}=$
$9\frac{3}{5}=$
$10\frac{3}{5}=$
$11\frac{3}{5}=$

$1\frac{4}{5}=\frac{?}{5}$
$2\frac{4}{5}=$
$3\frac{4}{5}=$
$4\frac{4}{5}=$
$5\frac{4}{5}=$
$6\frac{4}{5}=$
$7\frac{4}{5}=$
$8\frac{4}{5}=$
$9\frac{4}{5}=$
$10\frac{4}{5}=$
$11\frac{4}{5}=$

$\frac{8}{5}=$
$\frac{13}{5}=$
$\frac{18}{5}=$
$\frac{23}{5}=$
$\frac{28}{5}=$
$\frac{33}{5}=$
$\frac{38}{5}=$
$\frac{43}{5}=$
$\frac{48}{5}=$
$\frac{53}{5}=$
$\frac{58}{5}=$

$\frac{9}{5}=$
$\frac{14}{5}=$
$\frac{19}{5}=$
$\frac{24}{5}=$
$\frac{29}{5}=$
$\frac{34}{5}=$
$\frac{39}{5}=$
$\frac{44}{5}=$
$\frac{49}{5}=$
$\frac{54}{5}=$
$\frac{59}{5}=$



Find $\frac{1}{5}$ of:

1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60

Find $\frac{2}{5}$ of:

5 10 15 20
25 30 35 40
45 50 55 60

Find $\frac{3}{5}$ of:

5 10 15 20
25 30 35 40
45 50 55 60

Find $\frac{4}{5}$ of:

5 10 15 20
25 30 35 40
45 50 55 60

How many are $\frac{5}{5}$ of:

1, 7, 9, 12, 24, 30, 41, 52, 60.

1 is $\frac{1}{5}$ of what number?
2 " " "
3 " " "
4 " " "
5 " " "
6 " " "
7 " " "
8 " " "
9 " " "
10 " " "
11 " " "
12 " " "

1. Mrs. Ellis had 30 quarts of milk, and sold $\frac{4}{5}$ of them. How many quarts did she sell? How many quarts were not sold?

2. Mrs. Belt cut 6 oranges into fifths. How many fifths had she?

3. Mr. Stone had 60 cents; he gave Laura $\frac{2}{5}$ of them, John $\frac{2}{5}$, and the remainder to Kate. How many cents did he give to Kate?

4. Fannie has 4 cents, which is $\frac{1}{5}$ as much as Gertrude has. How many cents has Gertrude?

5. Julia had 15 books, but she gave $\frac{2}{5}$ of them away. How many books did she give away? How many books had she left?

6. Cora's teacher gave her 35 words to spell. She failed on $\frac{1}{5}$ of them. How many words did she have right?

7. Arthur has 10 pencils. $\frac{3}{5}$ of them are covered with red paper, and the rest with blue. How many pencils are covered with blue paper?

8. If $\frac{1}{5}$ of a pole 45 feet long is under water, how many feet are above water?

9. John had 55 papers, and sold all but $\frac{1}{5}$ of them. How many papers did he sell?

10. If $\frac{1}{5}$ of a barrel of flour costs 2 dollars, what will a whole barrel cost?

11. Julia sharpened $\frac{3}{5}$ of 35 pencils, and Cora sharpened the remainder. How many pencils did each sharpen?

12. If one pineapple costs $\frac{1}{5}$ of a dollar, how many pineapples can be bought for 2 dollars?

13. John had 60 chickens. He sold $\frac{2}{5}$ of them in November, and $\frac{1}{5}$ of them in December. How many chickens did he sell in all?

REVIEW AND BUSY WORK.

$7 = \frac{?}{5}$
$2 =$
$10 =$
$6 =$
$3 =$
$1 =$
$5 =$
$8 =$
$11 =$
$4 =$
$9 =$
$12 =$

$2\frac{1}{5} = \frac{?}{5}$
$10\frac{1}{5} =$
$6\frac{1}{5} =$
$3\frac{1}{5} =$
$1\frac{1}{5} =$
$5\frac{1}{5} =$
$8\frac{1}{5} =$
$11\frac{1}{5} =$
$4\frac{1}{5} =$
$9\frac{1}{5} =$
$7\frac{1}{5} =$

$10\frac{3}{5} = \frac{?}{5}$
$6\frac{3}{5} =$
$3\frac{3}{5} =$
$1\frac{3}{5} =$
$5\frac{3}{5} =$
$8\frac{3}{5} =$
$11\frac{3}{5} =$
$4\frac{3}{5} =$
$9\frac{3}{5} =$
$7\frac{3}{5} =$
$2\frac{3}{5} =$

$6\frac{2}{5} = \frac{?}{5}$
$3\frac{2}{5} =$
$1\frac{2}{5} =$
$5\frac{2}{5} =$
$8\frac{2}{5} =$
$11\frac{2}{5} =$
$4\frac{2}{5} =$
$9\frac{2}{5} =$
$7\frac{2}{5} =$
$2\frac{2}{5} =$
$10\frac{2}{5} =$

$3\frac{4}{5} = \frac{?}{5}$
$1\frac{4}{5} =$
$5\frac{4}{5} =$
$8\frac{4}{5} =$
$11\frac{4}{5} =$
$4\frac{4}{5} =$
$9\frac{4}{5} =$
$7\frac{4}{5} =$
$2\frac{4}{5} =$
$10\frac{4}{5} =$
$6\frac{4}{5} =$

$\frac{45}{5} =$
$\frac{35}{5} =$
$\frac{10}{5} =$
$\frac{50}{5} =$
$\frac{30}{5} =$
$\frac{15}{5} =$
$\frac{5}{5} =$
$\frac{25}{5} =$
$\frac{40}{5} =$
$\frac{55}{5} =$
$\frac{20}{5} =$
$\frac{60}{5} =$

$\frac{21}{5} =$
$\frac{46}{5} =$
$\frac{36}{5} =$
$\frac{11}{5} =$
$\frac{51}{5} =$
$\frac{31}{5} =$
$\frac{16}{5} =$
$\frac{6}{5} =$
$\frac{26}{5} =$
$\frac{41}{5} =$
$\frac{56}{5} =$

$\frac{53}{5} =$
$\frac{23}{5} =$
$\frac{48}{5} =$
$\frac{38}{5} =$
$\frac{13}{5} =$
$\frac{53}{5} =$
$\frac{33}{5} =$
$\frac{18}{5} =$
$\frac{8}{5} =$
$\frac{28}{5} =$
$\frac{43}{5} =$

$\frac{42}{5} =$
$\frac{57}{5} =$
$\frac{22}{5} =$
$\frac{47}{5} =$
$\frac{37}{5} =$
$\frac{12}{5} =$
$\frac{52}{5} =$
$\frac{32}{5} =$
$\frac{17}{5} =$
$\frac{7}{5} =$
$\frac{27}{5} =$

$\frac{29}{5} =$
$\frac{44}{5} =$
$\frac{59}{5} =$
$\frac{24}{5} =$
$\frac{49}{5} =$
$\frac{39}{5} =$
$\frac{14}{5} =$
$\frac{54}{5} =$
$\frac{34}{5} =$
$\frac{19}{5} =$
$\frac{9}{5} =$

Find $\frac{1}{5}$ of:

1	41	21	31	40	11
22	58	32	14	2	42
43	12	23	56	33	3
35	24	5	4	15	44
53	34	55	25	10	51
59	46	16	36	27	60
26	6	47	17	38	13
57	37	19	7	49	8
20	54	48	28	29	52
9	18	30	39	50	45

Find $\frac{3}{5}$ of:

45	25	40
35	10	30
50	60	15
5	20	55

Find $\frac{2}{5}$ of:

5	50	35
45	20	60
10	25	15
55	40	30

Find $\frac{4}{5}$ of:

35	60	15
25	40	30
55	20	50
10	45	5

How many are $\frac{5}{5}$ of:

7	9	23	49
16	50	42	58

9 is $\frac{1}{5}$ of what number?

12 “ “ “

1 “ “ “

6 “ “ “

2 “ “ “

7 “ “ “

10 “ “ “

3 “ “ “

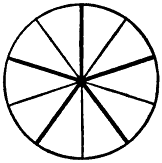
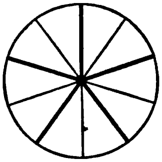
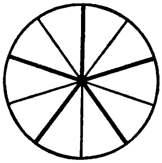
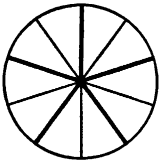
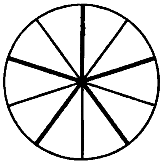
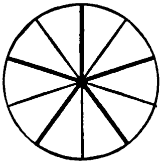
8 “ “ “

5 “ “ “

11 “ “ “

4 “ “ “

TENTHS.

$1=\frac{?}{10}$ $1\frac{1}{10}=\frac{?}{10}$ $1\frac{1}{5}=\frac{?}{10}$ $1\frac{3}{10}=\frac{?}{10}$ $1\frac{2}{5}=\frac{?}{10}$

$2=$ $2\frac{1}{10}=$ $2\frac{1}{5}=$ $2\frac{3}{10}=$ $2\frac{2}{5}=$

$3=$ $3\frac{1}{10}=$ $3\frac{1}{5}=$ $3\frac{3}{10}=$ $3\frac{2}{5}=$

$4=$ $4\frac{1}{10}=$ $4\frac{1}{5}=$ $4\frac{3}{10}=$ $4\frac{2}{5}=$

$5=$ $5\frac{1}{10}=$ $5\frac{1}{5}=$ $5\frac{3}{10}=$ $5\frac{2}{5}=$

$6=$ $6\frac{1}{10}=$ $6\frac{1}{5}=$ $6\frac{3}{10}=$ $6\frac{2}{5}=$

$7=$ $7\frac{1}{10}=$ $7\frac{1}{5}=$ $7\frac{3}{10}=$ $7\frac{2}{5}=$

$8=$ $8\frac{1}{10}=$ $8\frac{1}{5}=$ $8\frac{3}{10}=$ $8\frac{2}{5}=$

$9=$ $9\frac{1}{10}=$ $9\frac{1}{5}=$ $9\frac{3}{10}=$ $9\frac{2}{5}=$

$10=$ $10\frac{1}{10}=$ $10\frac{1}{5}=$ $10\frac{3}{10}=$ $10\frac{2}{5}=$

$11=$ $11\frac{1}{10}=$ $11\frac{1}{5}=$ $11\frac{3}{10}=$ $11\frac{2}{5}=$

$12=$

$\frac{10}{10}=$ $\frac{11}{10}=$ $\frac{12}{10}=$ $\frac{13}{10}=$ $\frac{14}{10}=$

$\frac{20}{10}=$ $\frac{21}{10}=$ $\frac{22}{10}=$ $\frac{23}{10}=$ $\frac{24}{10}=$

$\frac{30}{10}=$ $\frac{31}{10}=$ $\frac{32}{10}=$ $\frac{33}{10}=$ $\frac{34}{10}=$

$\frac{40}{10}=$ $\frac{41}{10}=$ $\frac{42}{10}=$ $\frac{43}{10}=$ $\frac{44}{10}=$

$\frac{50}{10}=$ $\frac{51}{10}=$ $\frac{52}{10}=$ $\frac{53}{10}=$ $\frac{54}{10}=$

$\frac{60}{10}=$ $\frac{61}{10}=$ $\frac{62}{10}=$ $\frac{63}{10}=$ $\frac{64}{10}=$

$\frac{70}{10}=$ $\frac{71}{10}=$ $\frac{72}{10}=$ $\frac{73}{10}=$ $\frac{74}{10}=$

$\frac{80}{10}=$ $\frac{81}{10}=$ $\frac{82}{10}=$ $\frac{83}{10}=$ $\frac{84}{10}=$

$\frac{90}{10}=$ $\frac{91}{10}=$ $\frac{92}{10}=$ $\frac{93}{10}=$ $\frac{94}{10}=$

$\frac{100}{10}=$ $\frac{101}{10}=$ $\frac{102}{10}=$ $\frac{103}{10}=$ $\frac{104}{10}=$

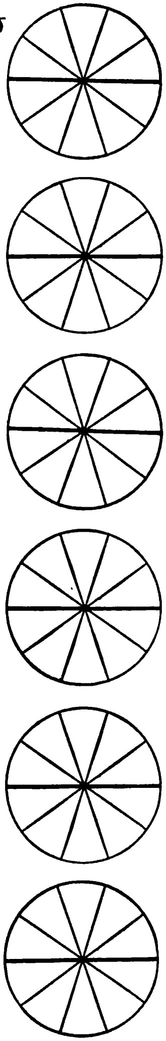
$\frac{110}{10}=$ $\frac{111}{10}=$ $\frac{112}{10}=$ $\frac{113}{10}=$ $\frac{114}{10}=$

$\frac{120}{10}=$

TENTHS.

$1\frac{1}{2}=\frac{?}{10}$	$1\frac{3}{5}=\frac{?}{10}$	$1\frac{7}{10}=\frac{?}{10}$	$1\frac{4}{5}=\frac{?}{10}$	$1\frac{9}{10}=\frac{?}{10}$
$2\frac{1}{2}=$	$2\frac{3}{5}=$	$2\frac{7}{10}=$	$2\frac{4}{5}=$	$2\frac{9}{10}=$
$3\frac{1}{2}=$	$3\frac{3}{5}=$	$3\frac{7}{10}=$	$3\frac{4}{5}=$	$3\frac{9}{10}=$
$4\frac{1}{2}=$	$4\frac{3}{5}=$	$4\frac{7}{10}=$	$4\frac{4}{5}=$	$4\frac{9}{10}=$
$5\frac{1}{2}=$	$5\frac{3}{5}=$	$5\frac{7}{10}=$	$5\frac{4}{5}=$	$5\frac{9}{10}=$
$6\frac{1}{2}=$	$6\frac{3}{5}=$	$6\frac{7}{10}=$	$6\frac{4}{5}=$	$6\frac{9}{10}=$
$7\frac{1}{2}=$	$7\frac{3}{5}=$	$7\frac{7}{10}=$	$7\frac{4}{5}=$	$7\frac{9}{10}=$
$8\frac{1}{2}=$	$8\frac{3}{5}=$	$8\frac{7}{10}=$	$8\frac{4}{5}=$	$8\frac{9}{10}=$
$9\frac{1}{2}=$	$9\frac{3}{5}=$	$9\frac{7}{10}=$	$9\frac{4}{5}=$	$9\frac{9}{10}=$
$10\frac{1}{2}=$	$10\frac{3}{5}=$	$10\frac{7}{10}=$	$10\frac{4}{5}=$	$10\frac{9}{10}=$
$11\frac{1}{2}=$	$11\frac{3}{5}=$	$11\frac{7}{10}=$	$11\frac{4}{5}=$	$11\frac{9}{10}=$

$\frac{15}{10}=$	$\frac{16}{10}=$	$\frac{17}{10}=$	$\frac{18}{10}=$	$\frac{19}{10}=$
$\frac{25}{10}=$	$\frac{26}{10}=$	$\frac{27}{10}=$	$\frac{28}{10}=$	$\frac{29}{10}=$
$\frac{35}{10}=$	$\frac{36}{10}=$	$\frac{37}{10}=$	$\frac{38}{10}=$	$\frac{39}{10}=$
$\frac{45}{10}=$	$\frac{46}{10}=$	$\frac{47}{10}=$	$\frac{48}{10}=$	$\frac{49}{10}=$
$\frac{55}{10}=$	$\frac{56}{10}=$	$\frac{57}{10}=$	$\frac{58}{10}=$	$\frac{59}{10}=$
$\frac{65}{10}=$	$\frac{66}{10}=$	$\frac{67}{10}=$	$\frac{68}{10}=$	$\frac{69}{10}=$
$\frac{75}{10}=$	$\frac{76}{10}=$	$\frac{77}{10}=$	$\frac{78}{10}=$	$\frac{79}{10}=$
$\frac{85}{10}=$	$\frac{86}{10}=$	$\frac{87}{10}=$	$\frac{88}{10}=$	$\frac{89}{10}=$
$\frac{95}{10}=$	$\frac{96}{10}=$	$\frac{97}{10}=$	$\frac{98}{10}=$	$\frac{99}{10}=$
$\frac{105}{10}=$	$\frac{106}{10}=$	$\frac{107}{10}=$	$\frac{108}{10}=$	$\frac{109}{10}=$
$\frac{115}{10}=$	$\frac{116}{10}=$	$\frac{117}{10}=$	$\frac{118}{10}=$	$\frac{119}{10}=$



Find $\frac{1}{10}$ of numbers from 1 to 120.

Ex. $\frac{1}{10}$ of $1=?$
$\frac{1}{10}$ of $2=?$
$\frac{1}{10}$ of $3=?$
$\frac{1}{10}$ of $4=?$
$\frac{1}{10}$ of $5=?$
$\frac{1}{10}$ of $6=?$ etc.

Find $\frac{2}{10}$, $\frac{3}{10}$, $\frac{4}{10}$, $\frac{5}{10}$, $\frac{6}{10}$, $\frac{7}{10}$, $\frac{8}{10}$, and $\frac{9}{10}$ of 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, and 120.

$\frac{1}{10}$ of $10=?$
$\frac{2}{10}$ of $10=?$
$\frac{1}{10}$ of $20=?$
$\frac{2}{10}$ of $20=?$ etc.

or

$\frac{1}{10}$ of $10=?$
$\frac{2}{10}$ of $10=?$
$\frac{3}{10}$ of $10=?$
$\frac{4}{10}$ of $10=?$ etc.

How many are $\frac{10}{10}$ of 7, 14, 20, 35, 63, 97, and 114.

1 is $\frac{1}{10}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. If Stephen earns $\frac{1}{10}$ of a dollar a day, how long will it take him to earn 80 cents?

2. Mr. King had 80 sheep. He sold Mr. Grace $\frac{4}{10}$ of them. How many sheep did he sell? How many sheep had he left?

3. John sold $\frac{9}{10}$ of 110 papers. How many papers did he sell? What part of his papers were not sold?

4. John sold $\frac{3}{10}$ of 30 quarts of berries each day for 5 days. How many quarts of berries did he sell in all?

5. In a box there were 90 pieces of chalk, but $\frac{2}{10}$ of them have been taken out. How many pieces are left in the box?

6. Sarah's vacation lasted 70 days. If she was away from home $\frac{6}{10}$ of the time, how many days was she at home?

7. If it takes 12 days to build $\frac{1}{10}$ of a house, how long will it take to build the whole house?

8. By dropping a box in which were 50 pencils, Charles broke $\frac{4}{10}$ of them. How many pencils did he break? How many pencils were not broken?

9. Cora failed on $\frac{1}{10}$, and Willie on $\frac{2}{10}$ of 40 words. How many words did both have wrong?

10. $\frac{9}{10}$ of 30 apples are how many more than $\frac{9}{10}$ of 20 apples?

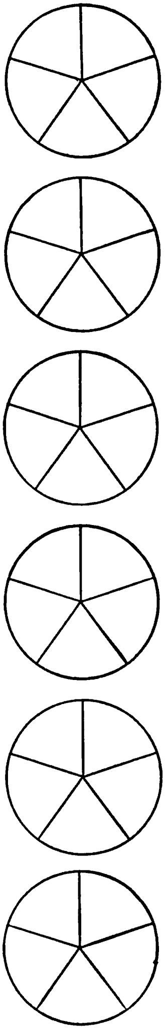
11. Marion cut $4\frac{1}{2}$ apples into tenths. How many tenths had she?

12. How many dollars has Laura saved, if she has saved $\frac{1}{10}$ of a dollar each day for 25 days?

13. Nellie picked up 20 shells on the beach. She gave her mother $\frac{1}{2}$ of them, and divided the rest equally among her 5 brothers. What part of her shells did she give to each? How many shells?

14. On Alice's birthday her mother gave her $\frac{1}{2}$, her sister $\frac{1}{5}$, and her brother $\frac{2}{10}$ of a dollar. How many cents did she receive from them all?

FIFTHS.



$1=\frac{?}{5}$
$2=$
$3=$
$4=$
$5=$
$6=$
$7=$
$8=$
$9=$
$10=$
$11=$
$12=$

$1\frac{1}{5}=\frac{?}{5}$
$2\frac{1}{5}=$
$3\frac{1}{5}=$
$4\frac{1}{5}=$
$5\frac{1}{5}=$
$6\frac{1}{5}=$
$7\frac{1}{5}=$
$8\frac{1}{5}=$
$9\frac{1}{5}=$
$10\frac{1}{5}=$
$11\frac{1}{5}=$

$1\frac{2}{5}=\frac{?}{5}$
$2\frac{2}{5}=$
$3\frac{2}{5}=$
$4\frac{2}{5}=$
$5\frac{2}{5}=$
$6\frac{2}{5}=$
$7\frac{2}{5}=$
$8\frac{2}{5}=$
$9\frac{2}{5}=$
$10\frac{2}{5}=$
$11\frac{2}{5}=$

$\frac{5}{5}=$
$\frac{10}{5}=$
$\frac{15}{5}=$
$\frac{20}{5}=$
$\frac{25}{5}=$
$\frac{30}{5}=$
$\frac{35}{5}=$
$\frac{40}{5}=$
$\frac{45}{5}=$
$\frac{50}{5}=$
$\frac{55}{5}=$
$\frac{60}{5}=$

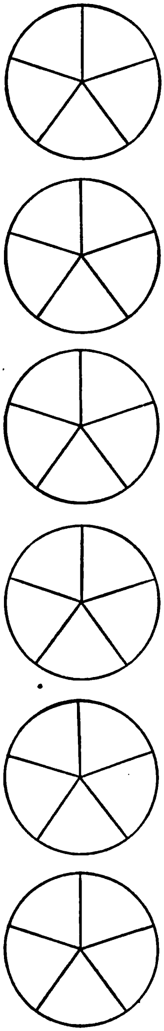
$\frac{6}{5}=$
$\frac{11}{5}=$
$\frac{16}{5}=$
$\frac{21}{5}=$
$\frac{26}{5}=$
$\frac{31}{5}=$
$\frac{36}{5}=$
$\frac{41}{5}=$
$\frac{46}{5}=$
$\frac{51}{5}=$
$\frac{56}{5}=$

$\frac{7}{5}=$
$\frac{12}{5}=$
$\frac{17}{5}=$
$\frac{22}{5}=$
$\frac{27}{5}=$
$\frac{32}{5}=$
$\frac{37}{5}=$
$\frac{42}{5}=$
$\frac{47}{5}=$
$\frac{52}{5}=$
$\frac{57}{5}=$

FIFTHS.

$1\frac{3}{5}=\frac{?}{5}$ $1\frac{4}{5}=\frac{?}{5}$
$2\frac{3}{5}=$ $2\frac{4}{5}=$
$3\frac{3}{5}=$ $3\frac{4}{5}=$
$4\frac{3}{5}=$ $4\frac{4}{5}=$
$5\frac{3}{5}=$ $5\frac{4}{5}=$
$6\frac{3}{5}=$ $6\frac{4}{5}=$
$7\frac{3}{5}=$ $7\frac{4}{5}=$
$8\frac{3}{5}=$ $8\frac{4}{5}=$
$9\frac{3}{5}=$ $9\frac{4}{5}=$
$10\frac{3}{5}=$ $10\frac{4}{5}=$
$11\frac{3}{5}=$ $11\frac{4}{5}=$

$\frac{8}{5}=$ $\frac{9}{5}=$
$\frac{13}{5}=$ $\frac{14}{5}=$
$\frac{18}{5}=$ $\frac{19}{5}=$
$\frac{23}{5}=$ $\frac{24}{5}=$
$\frac{28}{5}=$ $\frac{29}{5}=$
$\frac{33}{5}=$ $\frac{34}{5}=$
$\frac{38}{5}=$ $\frac{39}{5}=$
$\frac{43}{5}=$ $\frac{44}{5}=$
$\frac{48}{5}=$ $\frac{49}{5}=$
$\frac{53}{5}=$ $\frac{54}{5}=$
$\frac{58}{5}=$ $\frac{59}{5}=$



Find $\frac{1}{10}$ of:

69
10
81
30
110
50
68
9
82
29
107
49
16
78
36
96
56
115
15
74
35
95
55
116
20
80
40
100
60
112
19
76
39
99
111
59
63
4
87
24
103
44
62
3
88
104
23
43
66
8
83
28
109
48
70
7
84
27
105
47
14
77
34
94
54
117
13
71
93
53
118
33
18
79
38
98
58
113
17
75
37
97
57
114
64
2
90
22
102
42
61
1
89
21
41
101
65
6
85
26
108
46
67
5
86
25
106
45
12
73
32
92
119
52
120
51
91
31
72
11

Find $\frac{3}{10}$ of 30, 80, 40, 120, 70, 20, 90, 60, 10, 100, 50, 110.

Find $\frac{7}{10}$ of 110, 50, 100, 10, 60, 90, 20, 70, 120, 40, 80, and 30.

Find $\frac{5}{10}$ of 10, 70, 30, 100, 20, 80, 50, 90, 40, 110, 60, and 120.

Find $\frac{9}{10}$ of 120, 60, 110, 40, 90, 50, 80, 20, 100, 30, 70, and 10.

Find $\frac{4}{10}$ of 80, 120, 20, 60, 100, 110, 30, 90, 40, 70, 10, and 50.

Find $\frac{8}{10}$ of 30, 90, 70, 40, 50, 10, 120, 80, 60, 20, 110, and 100.

Find $\frac{6}{10}$ of 110, 60, 120, 50, 90, 40, 100, 20, 80, 10, 70, and 30.

Find $\frac{2}{10}$ of 10, 100, 50, 110, 70, 20, 90, 60, 30, 80, 40, and 120.

How many are $\frac{10}{10}$ of 3, 17, 40, 61, 73, 85, 92, 103, and 117.

3 is $\frac{1}{10}$ of what number?

9 " " "

1 " " "

7 " " "

11 " " "

2 " " "

4 " " "

8 " " "

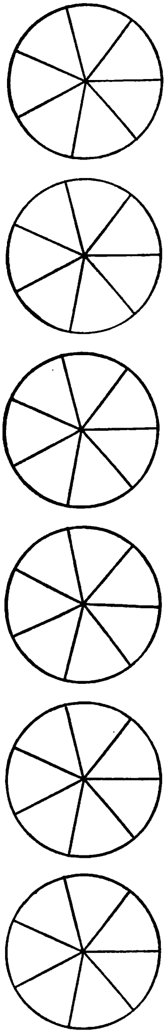
5 " " "

10 " " "

6 " " "

12 " " "

SEVENTHS.



$1=\frac{?}{7}$	$1\frac{1}{7}=\frac{?}{7}$	$1\frac{2}{7}=\frac{?}{7}$	$1\frac{3}{7}=\frac{?}{7}$
$2=$	$2\frac{1}{7}=$	$2\frac{2}{7}=$	$2\frac{3}{7}=$
$3=$	$3\frac{1}{7}=$	$3\frac{2}{7}=$	$3\frac{3}{7}=$
$4=$	$4\frac{1}{7}=$	$4\frac{2}{7}=$	$4\frac{3}{7}=$
$5=$	$5\frac{1}{7}=$	$5\frac{2}{7}=$	$5\frac{3}{7}=$
$6=$	$6\frac{1}{7}=$	$6\frac{2}{7}=$	$6\frac{3}{7}=$
$7=$	$7\frac{1}{7}=$	$7\frac{2}{7}=$	$7\frac{3}{7}=$
$8=$	$8\frac{1}{7}=$	$8\frac{2}{7}=$	$8\frac{3}{7}=$
$9=$	$9\frac{1}{7}=$	$9\frac{2}{7}=$	$9\frac{3}{7}=$
$10=$	$10\frac{1}{7}=$	$10\frac{2}{7}=$	$10\frac{3}{7}=$
$11=$	$11\frac{1}{7}=$	$11\frac{2}{7}=$	$11\frac{3}{7}=$
$12=$			
$\frac{7}{7}=$	$\frac{8}{7}=$	$\frac{9}{7}=$	$\frac{10}{7}=$
$\frac{14}{7}=$	$\frac{15}{7}=$	$\frac{16}{7}=$	$\frac{17}{7}=$
$\frac{21}{7}=$	$\frac{22}{7}=$	$\frac{23}{7}=$	$\frac{24}{7}=$
$\frac{28}{7}=$	$\frac{29}{7}=$	$\frac{30}{7}=$	$\frac{31}{7}=$
$\frac{35}{7}=$	$\frac{36}{7}=$	$\frac{37}{7}=$	$\frac{38}{7}=$
$\frac{42}{7}=$	$\frac{43}{7}=$	$\frac{44}{7}=$	$\frac{45}{7}=$
$\frac{49}{7}=$	$\frac{50}{7}=$	$\frac{51}{7}=$	$\frac{52}{7}=$
$\frac{56}{7}=$	$\frac{57}{7}=$	$\frac{58}{7}=$	$\frac{59}{7}=$
$\frac{63}{7}=$	$\frac{64}{7}=$	$\frac{65}{7}=$	$\frac{66}{7}=$
$\frac{70}{7}=$	$\frac{71}{7}=$	$\frac{72}{7}=$	$\frac{73}{7}=$
$\frac{77}{7}=$	$\frac{78}{7}=$	$\frac{79}{7}=$	$\frac{80}{7}=$
$\frac{84}{7}=$			

SEVENTHS.

$1\frac{4}{7}=\frac{?}{7}$
$2\frac{4}{7}=$
$3\frac{4}{7}=$
$4\frac{4}{7}=$
$5\frac{4}{7}=$
$6\frac{4}{7}=$
$7\frac{4}{7}=$
$8\frac{4}{7}=$
$9\frac{4}{7}=$
$10\frac{4}{7}=$
$11\frac{4}{7}=$

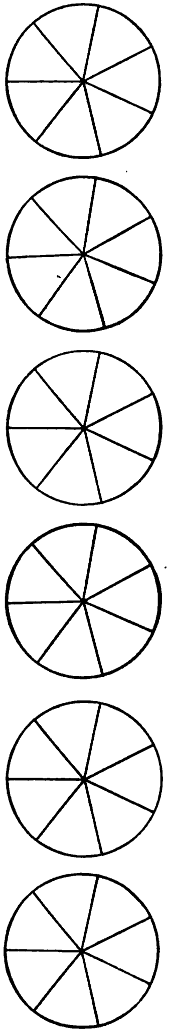
$1\frac{5}{7}=\frac{?}{7}$
$2\frac{5}{7}=$
$3\frac{5}{7}=$
$4\frac{5}{7}=$
$5\frac{5}{7}=$
$6\frac{5}{7}=$
$7\frac{5}{7}=$
$8\frac{5}{7}=$
$9\frac{5}{7}=$
$10\frac{5}{7}=$
$11\frac{5}{7}=$

$1\frac{6}{7}=\frac{?}{7}$
$2\frac{6}{7}=$
$3\frac{6}{7}=$
$4\frac{6}{7}=$
$5\frac{6}{7}=$
$6\frac{6}{7}=$
$7\frac{6}{7}=$
$8\frac{6}{7}=$
$9\frac{6}{7}=$
$10\frac{6}{7}=$
$11\frac{6}{7}=$

$\frac{11}{7}=$
$\frac{18}{7}=$
$\frac{25}{7}=$
$\frac{32}{7}=$
$\frac{39}{7}=$
$\frac{46}{7}=$
$\frac{53}{7}=$
$\frac{60}{7}=$
$\frac{67}{7}=$
$\frac{74}{7}=$
$\frac{81}{7}=$

$\frac{12}{7}=$
$\frac{19}{7}=$
$\frac{26}{7}=$
$\frac{33}{7}=$
$\frac{40}{7}=$
$\frac{47}{7}=$
$\frac{54}{7}=$
$\frac{61}{7}=$
$\frac{68}{7}=$
$\frac{75}{7}=$
$\frac{82}{7}=$

$\frac{13}{7}=$
$\frac{20}{7}=$
$\frac{27}{7}=$
$\frac{34}{7}=$
$\frac{41}{7}=$
$\frac{48}{7}=$
$\frac{55}{7}=$
$\frac{62}{7}=$
$\frac{69}{7}=$
$\frac{76}{7}=$
$\frac{83}{7}=$



Find $\frac{1}{7}$ of the numbers from 1 to 84.

Ex. $\frac{1}{7}$ of $1=?$
$\frac{1}{7}$ of $2=?$
$\frac{1}{7}$ of $3=?$
$\frac{1}{7}$ of $4=?$
$\frac{1}{7}$ of $5=?$ etc.

Find $\frac{2}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{5}{7}$, and $\frac{6}{7}$ of 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, and 84.

How many are $\frac{7}{7}$ of 2, 3, 9, 14, 24, 35, 50, 63, 71, and 80.

1 is $\frac{1}{7}$ of what number?
2 “ “ “
3 “ “ “
4 “ “ “
5 “ “ “
6 “ “ “
7 “ “ “
8 “ “ “
9 “ “ “
10 “ “ “
11 “ “ “
12 “ “ “

1. John had 14 oranges and ate $\frac{1}{7}$ of them. How many oranges did he eat? How many oranges had he left?

2. Mrs. Rice paid $7 for a chair, which was $\frac{1}{7}$ as much as she paid for a couch. How much did the couch cost?

3. Peter's grandfather is 70 years old, and his grandmother is $\frac{6}{7}$ as old. How old is his grandmother?

4. Kate had 42 cents and spent $\frac{5}{7}$ of her money. How many cents did she spend, and how many cents had she left?

5. If Ella cut 12 apples into sevenths, how many sevenths did she have?

6. How many cents will Tom earn in 4 days, if he earns $\frac{1}{7}$ of 77 cents a day?

7. Alfred earned $\frac{6}{7}$, and Herbert $\frac{3}{7}$ of 63 cents. How many more cents did Alfred earn than Herbert?

8. Mrs. Lane bought 28 plums. Alice ate $\frac{1}{7}$ of them, Julia $\frac{2}{7}$, Edward $\frac{3}{7}$, and Cora the remainder. How many plums did Cora eat?

9. Mr. White divided $\frac{3}{7}$ of 42 nuts equally among 3 boys. How many nuts did he give to each?

10. Carl picked $\frac{1}{7}$ of 15 quarts of berries. How many quarts did he pick?

11. If one doll costs $\frac{1}{7}$ of 35 cents, how many dolls can be bought for a quarter of a dollar?

12. Fred has $\frac{6}{7}$ of 70 cherries, and Frank has $\frac{5}{7}$ of 77 cherries. Which boy has the more cherries, and how many?

13. Mr. Small had 84 chickens. If he sold all but $\frac{1}{7}$ of them, how many chickens did he sell?

14. Edith had 56 cents. If she spent $\frac{5}{7}$ of her money for a book, what was the price of the book? How many cents did she have left?

REVIEW AND BUSY WORK.

$1=\frac{?}{7}$
$9=$
$4=$
$11=$
$8=$
$3=$
$10=$
$6=$
$2=$
$7=$
$5=$
$12=$

$5\frac{3}{7}=\frac{?}{7}$
$1\frac{3}{7}=$
$9\frac{3}{7}=$
$4\frac{3}{7}=$
$11\frac{3}{7}=$
$8\frac{3}{7}=$
$3\frac{3}{7}=$
$10\frac{3}{7}=$
$6\frac{3}{7}=$
$2\frac{3}{7}=$
$7\frac{3}{7}=$

$7\frac{6}{7}=\frac{?}{7}$
$5\frac{6}{7}=$
$1\frac{6}{7}=$
$9\frac{6}{7}=$
$4\frac{6}{7}=$
$11\frac{6}{7}=$
$8\frac{6}{7}=$
$3\frac{6}{7}=$
$10\frac{6}{7}=$
$6\frac{6}{7}=$
$2\frac{6}{7}=$

$2\frac{1}{7}=\frac{?}{7}$
$7\frac{1}{7}=$
$5\frac{1}{7}=$
$1\frac{1}{7}=$
$9\frac{1}{7}=$
$4\frac{1}{7}=$
$11\frac{1}{7}=$
$8\frac{1}{7}=$
$3\frac{1}{7}=$
$10\frac{1}{7}=$
$6\frac{1}{7}=$

$6\frac{4}{7}=\frac{?}{7}$
$2\frac{4}{7}=$
$7\frac{4}{7}=$
$5\frac{4}{7}=$
$1\frac{4}{7}=$
$9\frac{4}{7}=$
$4\frac{4}{7}=$
$11\frac{4}{7}=$
$8\frac{4}{7}=$
$3\frac{4}{7}=$
$10\frac{4}{7}=$

$10\frac{2}{7}=\frac{?}{7}$
$6\frac{2}{7}=$
$2\frac{2}{7}=$
$7\frac{2}{7}=$
$5\frac{2}{7}=$
$1\frac{2}{7}=$
$9\frac{2}{7}=$
$4\frac{2}{7}=$
$11\frac{2}{7}=$
$8\frac{2}{7}=$
$3\frac{2}{7}=$

$3\frac{5}{7}=\frac{?}{7}$
$10\frac{5}{7}=$
$6\frac{5}{7}=$
$2\frac{5}{7}=$
$7\frac{5}{7}=$
$5\frac{5}{7}=$
$1\frac{5}{7}=$
$9\frac{5}{7}=$
$4\frac{5}{7}=$
$11\frac{5}{7}=$
$8\frac{5}{7}=$

$\frac{63}{7}=$
$\frac{28}{7}=$
$\frac{77}{7}=$
$\frac{56}{7}=$
$\frac{21}{7}=$
$\frac{70}{7}=$
$\frac{42}{7}=$
$\frac{14}{7}=$
$\frac{49}{7}=$
$\frac{35}{7}=$
$\frac{7}{7}=$
$\frac{84}{7}=$

$\frac{31}{7}=$
$\frac{80}{7}=$
$\frac{59}{7}=$
$\frac{24}{7}=$
$\frac{73}{7}=$
$\frac{45}{7}=$
$\frac{17}{7}=$
$\frac{52}{7}=$
$\frac{38}{7}=$
$\frac{10}{7}=$
$\frac{66}{7}=$

$\frac{83}{7}=$
$\frac{62}{7}=$
$\frac{27}{7}=$
$\frac{76}{7}=$
$\frac{48}{7}=$
$\frac{20}{7}=$
$\frac{55}{7}=$
$\frac{41}{7}=$
$\frac{13}{7}=$
$\frac{69}{7}=$
$\frac{34}{7}=$

$\frac{57}{7}=$
$\frac{22}{7}=$
$\frac{71}{7}=$
$\frac{43}{7}=$
$\frac{15}{7}=$
$\frac{50}{7}=$
$\frac{36}{7}=$
$\frac{8}{7}=$
$\frac{64}{7}=$
$\frac{29}{7}=$
$\frac{78}{7}=$

$\frac{25}{7}=$
$\frac{74}{7}=$
$\frac{46}{7}=$
$\frac{18}{7}=$
$\frac{53}{7}=$
$\frac{39}{7}=$
$\frac{11}{7}=$
$\frac{67}{7}=$
$\frac{32}{7}=$
$\frac{81}{7}=$
$\frac{60}{7}=$

$\frac{72}{7}=$
$\frac{44}{7}=$
$\frac{16}{7}=$
$\frac{51}{7}=$
$\frac{37}{7}=$
$\frac{9}{7}=$
$\frac{65}{7}=$
$\frac{30}{7}=$
$\frac{79}{7}=$
$\frac{58}{7}=$
$\frac{23}{7}=$

$\frac{47}{7}=$
$\frac{19}{7}=$
$\frac{54}{7}=$
$\frac{40}{7}=$
$\frac{12}{7}=$
$\frac{68}{7}=$
$\frac{33}{7}=$
$\frac{82}{7}=$
$\frac{61}{7}=$
$\frac{26}{7}=$
$\frac{75}{7}=$

Find $\frac{1}{7}$ of:

1
36
72
5
49
3
62
37
74
10
82
13

15
22
58
19
63
17
76
23
60
80
54
27

29
8
44
33
77
31
48
9
46
52
68
41

43
78
30
47
21
45
34
79
32
66
40
55

57
64
16
61
35
59
20
65
18
38
26
69

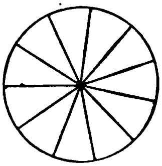
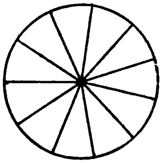
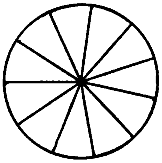
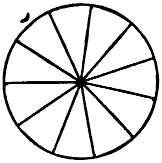
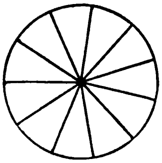
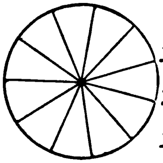
71
50
2
75
7
73
6
51
4
24
12
83

11
25
39
53
67
81
28
84
70
56
42
14

Find $\frac{2}{7}$ of 7, 77, 42, 28, 63, 14, 56, 35, 70, 21, 84, and 49.
Find $\frac{4}{7}$ of 49, 63, 28, 42, 14, 84, 21, 56, 77, 7, 35, and 70.
Find $\frac{6}{7}$ of 70, 35, 7, 77, 56, 21, 42, 14, 84, 28, 63, and 49.
Find $\frac{3}{7}$ of 28, 42, 77, 7, 63, 14, 56, 35, 49, 84, 21, and 70.
Find $\frac{5}{7}$ of 63, 49, 84, 14, 42, 28, 77, 56, 21, 70, 35, and 7.
How many are $\frac{7}{7}$ of 1, 7, 9, 14, 60, 80, 71, 54 and 18.

7 is $\frac{1}{7}$ of what number?
12 “ “ “
2 “ “ “
6 “ “ “
9 “ “ “
1 “ “ “
5 “ “ “
3 “ “ “
11 “ “ “
4 “ “ “
10 “ “ “
8 “ “ “

ELEVENTHS.

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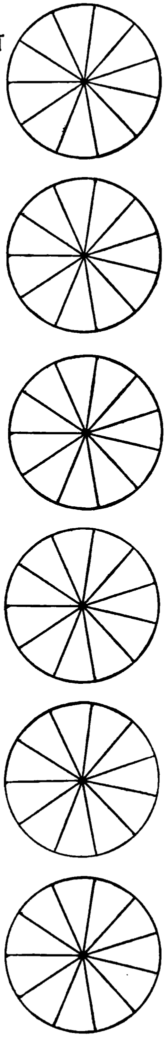
ELEVENTHS.



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1. If Frank saves $\frac{1}{11}$ of 44 dollars each month, how much will he save in a year? How long will it take him to save 20 dollars?

2. Mr. Stone sold $\frac{3}{11}$ of 121 pecks of apples. How many pecks did he sell?

3. If Susie does $\frac{1}{11}$ of 110 examples every day, how many examples will she do in 4 days?

4. Mr. Jones has 99 fruit trees in his orchard. If $\frac{7}{11}$ of them are pear trees, how many pear trees has he? If the remainder are apple trees, how many apple trees has he? How many more pear than apple trees are there?

5. If $\frac{5}{11}$ of a pole, which is 22 feet long, is under water, how many feet are under water? How many feet are above water?

6. In Miss Long's room there are 55 pupils. $\frac{7}{11}$ of them are boys. How many are boys? How many are girls?

7. Mrs. White bought a chair for $\frac{2}{11}$, and a table for $\frac{3}{11}$ of $88. How many dollars did she pay for both?

8. Mrs. French had 77 eggs, and sold $\frac{5}{11}$ of them to Mrs. Jordan, and $\frac{3}{11}$ to Mrs. Marsh. How many eggs did she sell to both? How many more eggs to Mrs. Jordan than to Mrs. Marsh? How many eggs did she have left?

9. Patty had $\frac{6}{11}$ of 66 nuts, which she divided equally among 6 girls. How many nuts did she give to each?

10. Harry caught 1 fish, which was $\frac{1}{11}$ as much as his father caught. How many fish did his father catch?

11. In John's book there are 110 pages. He has read all but $\frac{2}{11}$ of them. How many pages has he read?

12. If a man earns $\frac{1}{11}$ of 132 dollars a week, how long will it take him to earn 60 dollars?

REVIEW AND BUSY WORK.

$1=\frac{?}{11}$ $5\frac{1}{11}=\frac{?}{11}$ $7\frac{2}{11}=\frac{?}{11}$ $2\frac{4}{11}=\frac{?}{11}$ $6\frac{8}{11}=\frac{?}{11}$ $10\frac{3}{11}=\frac{?}{11}$
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$\frac{55}{11}$	$\frac{78}{11}$	$\frac{24}{11}$	$\frac{70}{11}$	$\frac{118}{11}$	$\frac{36}{11}$
$\frac{11}{11}$	$\frac{56}{11}$	$\frac{79}{11}$	$\frac{26}{11}$	$\frac{74}{11}$	$\frac{113}{11}$
$\frac{99}{11}$	$\frac{12}{11}$	$\frac{57}{11}$	$\frac{81}{11}$	$\frac{30}{11}$	$\frac{69}{11}$
$\frac{44}{11}$	$\frac{100}{11}$	$\frac{13}{11}$	$\frac{59}{11}$	$\frac{85}{11}$	$\frac{25}{11}$
$\frac{121}{11}$	$\frac{45}{11}$	$\frac{101}{11}$	$\frac{15}{11}$	$\frac{63}{11}$	$\frac{80}{11}$
$\frac{88}{11}$	$\frac{122}{11}$	$\frac{46}{11}$	$\frac{103}{11}$	$\frac{19}{11}$	$\frac{58}{11}$
$\frac{33}{11}$	$\frac{89}{11}$	$\frac{123}{11}$	$\frac{48}{11}$	$\frac{107}{11}$	$\frac{14}{11}$
$\frac{110}{11}$	$\frac{34}{11}$	$\frac{90}{11}$	$\frac{125}{11}$	$\frac{52}{11}$	$\frac{102}{11}$
$\frac{66}{11}$	$\frac{111}{11}$	$\frac{35}{11}$	$\frac{92}{11}$	$\frac{129}{11}$	$\frac{47}{11}$
$\frac{22}{11}$	$\frac{67}{11}$	$\frac{112}{11}$	$\frac{37}{11}$	$\frac{96}{11}$	$\frac{124}{11}$
$\frac{77}{11}$	$\frac{23}{11}$	$\frac{68}{11}$	$\frac{114}{11}$	$\frac{41}{11}$	$\frac{91}{11}$
$\frac{132}{11}$					

$\frac{95}{11}$	$\frac{126}{11}$	$\frac{53}{11}$	$\frac{105}{11}$	$\frac{21}{11}$
$\frac{40}{11}$	$\frac{93}{11}$	$\frac{130}{11}$	$\frac{50}{11}$	$\frac{109}{11}$
$\frac{117}{11}$	$\frac{38}{11}$	$\frac{97}{11}$	$\frac{127}{11}$	$\frac{54}{11}$
$\frac{73}{11}$	$\frac{115}{11}$	$\frac{42}{11}$	$\frac{94}{11}$	$\frac{131}{11}$
$\frac{29}{11}$	$\frac{71}{11}$	$\frac{119}{11}$	$\frac{39}{11}$	$\frac{98}{11}$
$\frac{84}{11}$	$\frac{27}{11}$	$\frac{75}{11}$	$\frac{116}{11}$	$\frac{43}{11}$
$\frac{62}{11}$	$\frac{82}{11}$	$\frac{31}{11}$	$\frac{72}{11}$	$\frac{120}{11}$
$\frac{18}{11}$	$\frac{60}{11}$	$\frac{86}{11}$	$\frac{28}{11}$	$\frac{76}{11}$
$\frac{106}{11}$	$\frac{16}{11}$	$\frac{64}{11}$	$\frac{83}{11}$	$\frac{32}{11}$
$\frac{51}{11}$	$\frac{104}{11}$	$\frac{20}{11}$	$\frac{61}{11}$	$\frac{87}{11}$
$\frac{128}{11}$	$\frac{49}{11}$	$\frac{108}{11}$	$\frac{17}{11}$	$\frac{65}{11}$

Find $\frac{1}{11}$ of:

63	128	52	34	15	3
29	132	95	79	103	117
74	98	125	45	25	9
40	20	59	89	70	112
80	65	107	54	36	17
49	31	12	97	81	105
92	76	100	114	47	27
122	42	22	6	91	72
56	86	67	109	119	38
127	51	33	14	2	83
131	94	78	102	116	130
60	124	44	24	8	62
19	58	87	69	111	121
64	129	53	35	16	4
30	11	96	84	104	118
75	99	126	46	26	10
41	21	5	90	71	113
85	66	108	55	37	18
50	32	13	1	82	106
93	77	101	115	48	28
123	43	23	7	61	73
57	88	68	110	120	39

Find $\frac{3}{11}$ of 88, 11, 99, 22, 77, 33, 110, 44, 121, 55, 132, and 66.

Find $\frac{6}{11}$ of 66, 132, 55, 121, 44, 110, 33, 77, 22, 99, 11, and 88.

Find $\frac{2}{11}$ of 88, 22, 110, 55, 11, 77, 44, 132, 99, 33, 121, and 66.

Find $\frac{9}{11}$ of 66, 121, 33, 99, 132, 44, 77, 11, 55, 110, 22, and 88.

Find $\frac{8}{11}$ of 55, 110, 22, 88, 132, 44, 77, 11, 66, 121, 33, and 99.

Find $\frac{4}{11}$ of 132, 44, 77, 11, 66, 121, 33, 99, 55, 110, 22, and 88.

Find $\frac{10}{11}$ of 88, 11, 77, 99, 22, 44, 132, 33, 121, 66, 110, and 55.

Find $\frac{5}{11}$ of 110, 44, 121, 55, 132, 66, 88, 11, 99, 22, 77, and 33.

Find $\frac{7}{11}$ of 88, 22, 11, 110, 77, 99, 55, 33, 132, 44, 66, and 121.

How many are $\frac{11}{11}$ of 9, 44, 17, 62, 100, 91, 48, 57, and 40.

12 is $\frac{1}{11}$ of what number?
7 “ “ “
4 “ “ “
9 “ “ “
2 “ “ “
6 “ “ “
11 “ “ “
3 “ “ “
5 “ “ “
8 “ “ “
1 “ “ “
10 “ “ “

MATHEMATICS.

Aids to Number.—First Series. *Teachers' Edition.*

Oral Work—One to Ten. 25 cards with concise directions. By ANNA B. BADLAM, Rice Training School, Boston. Retail price, 40 cents.

THESE cards have been prepared to aid pupils in what we may term sight-work with objects, and aim to give them the power to work readily and accurately with objects to ten.

They furnish material for daily practice in addition and subtraction of object groups, and for systematic review which shall cover the work that may be done with numbers from one to ten.

The questions on the back of each card will suggest to the teacher, as she holds it before them, the sight-work to be done by the pupils.

Aids to Number.—First Series. *Pupils' Edition.*

Written Work—One to ten. Leatherette. 56 pages. Retail price, 30 cents. Introduction price, 25 cents.

THE Pupils' Edition serves as a supplement to the Teachers' Edition and furnishes, in a neatly-bound pamphlet, duplicates of the groups of objects found in the Teachers' Edition, with an abundance of material for slate-work, presented in a variety of ways, as a means of teaching the written expression for the oral work with which the pupils have become familiar.

Aids to Number.—Second Series. *Teachers'*

Edition. Oral Work—Ten to One Hundred. With especial reference to multiples of numbers from 1 to 10. 32 cards with concise directions. By ANNA B. BADLAM, of the Rice Training School, Boston. Retail price, 40 cents.

THESE cards are designed to teach sight-work with objects above ten, with special reference to the multiples of any group between one and ten. By means of the cards of the *First Series*, pupils will easily learn to recognize groups from one to ten; with this knowledge as a basis, they may be trained, by means of the Second Series, to deal with the various combinations of objects between ten and twenty, and to trace the relation of ten to one hundred. These Aids may be used in a great variety of ways, and will serve to give pupils a broad and comprehensive knowledge of the first principles of Number.

S. A. Ellis, *Supt. of Schools, Rochester, N. Y.:* I know of nothing better than your "Aids to Number," for pupils and teachers. The slate work and cards are correct in principle, in harmony with the best light we now have on the subject of teaching number, and are very convenient for use.

A. B. Whitman, *City Supt. of Schools, Appleton, Wis.:* I have examined them thoroughly and believe they are truly aids to our school work.

D. L. Kiehle, *State Supt. of Pub. Instr., St. Paul, Minn.:* The reception with which they have already met is a practical endorsement. I am pleased with them. They are in the line of good teaching.

W. P. Beckwith, *Supt. of Schools, Adams, Mass.:* We have found them very useful.

Everett B. Norton, *Supervisor of Schools, Farmington, Me.:* Since receiving the Number Cards I have put them to critical test in the hands of one of the best equipped and most successful Primary teachers I know, and I have been surprised at the results that have been achieved by their use. They make the dull and dry early stages of mathematics bright, and give pleasant first impressions that go with the pupil through all the later steps of what is too commonly a hated and detested study.

Aids to Number.—Second Series. *Pupils' Edition.*

Written work—Ten to One Hundred. Leatherette. 36 pages. Price by mail, 30 cents. Introduction price, 25 cents.

THIS book is arranged in pamplet form as a supplement to the "Teachers' Edition." It presents, in a variety of ways, the various written expressions for the oral work with objects between ten and twenty, with which the pupils have become familiar.

The Child's Number Charts.

By ANNA B. BADLAM, Principal of the Lewiston Practice School, Maine; formerly of the Rice Training School, Boston. Manilla card, 11 x 14 inches. Price, 5 cents each; $4.00 per hundred.

ON one side of these cards is an arrangement of groups of objects designed to teach addition and subtraction; on the opposite side, arrangements of series of equal groups to express multiples of objects, and designed to teach multiplication and division in a simple, practical manner.

This card will supply a want long felt in the school-room, since it places in the hands of each child the means to awaken his conception of the early steps in concrete numbers.

Mathematical Teaching and its Modern Methods.

By TRUMAN HENRY SAFFORD, Ph.D., Professor of Astronomy, Williams College, Mass. Paper. 47 pages. Retail price, 25 cents.

THIS essay was suggested by a long, practical experience in giving instruction in mathematical subjects, and the principles indicated are equally applicable to the rudiments of arithmetic and to the integral calculus, as well as to all intermediate branches of the science. The conclusions presented are believed to be in agreement with the views of progressive educators and differ essentially from the ordinary traditions.

The Educational Journal, *Toronto:* Every mathematical teacher will find this a valuable little monograph full of mature thought.

The Independent, *N. Y.:* The remarks on method and practical theory underlying it are all that can be desired and lay out the subject in the best possible manner for the teacher.

The Epoch, *N. Y.:* It is a very careful exposition of the principles that underlie the teaching of arithmetic, algebra, geometry; plane, algebraic, analytical, descriptive and spherical trigonometry; differential and integral calculus, and higher analysis. Dr. Safford, in this thoughtful and thorough little treatise, lays stress upon the point that all teaching should have a real objective basis.

Drill Charts.

For rapid, middle-grade practice work on the Fundamental Rules of Arithmetic. By C. P. HOWLAND, Principal of Tabor Academy, Marion, Mass. Cards, 8 x 9 inches. Price, 3 cents each; or $2.40 per hundred.

THE pupil's card contains columns of figures of four digits each, so arranged as to be easily referred to in assigning examples. The teacher's card has figures on both sides; on one side it is exactly like the pupil's card, — on the other side are figures from which the teacher is able, at a glance, to tell infallibly whether the examples have been correctly performed or not.

It is believed that these cards supply a need long felt among our teachers, in giving to them a means of supplying an infinite amount of drill-work for pupils with the least possible work for themselves. The amount of work that may be done with them is partly realized on noting that in "case one" nearly 20,000 entirely different combinations are possible, while in cases "three" and "four" the number is practically infinite.

Review Number Cards.

For Second and Third Year Pupils. By Ella M. Pierce, of Providence, R. I. Cards, 7 x 9 inches. Price, 3 cents each; or $2.40 per hundred.

THIS is a set of two cards, each designed to aid in a rapid review of addition and subtraction of simple numbers in the previous year's work. Card I. reviews numbers to 15. Card II. reviews to 20. Each pupil should be supplied with a card for recitation of abstract numbers in class, and for writing tables on slates. They effect a great saving of time in recitation, and of trouble in placing tables on the blackboard.

Teachers should order in packages of 25. Each package is accompanied by a leaflet explaining use of the cards.

Picture Problems.

By Miss H. A. Luddington, Principal of Training School, Pawtucket, R. I.; formerly Teacher of Methods and Training Teacher in Primary Department of State Normal School, New Britain, Conn., and Training Teacher in Cook County Normal School, Normal Park, Ill. 70 colored cards, 4 x 5 inches, printed on both sides, arranged in 9 sets, 6 to 10 cards in each set, with card of directions. Retail price, 65 cents. Special price for Introduction.

THESE cards contain pictures so grouped as to present problems based on the relations of numbers from two to ten. The first set presents problems in the number two; the second, in the number three; the third, in the number four, and so on. Accompanying each set are sheets of suggestive problems for the work on every number used, also a little Manual of directions and methods.

Some color training is provided by using in each of the nine sets two harmonious tints, a different color combination being employed for each number. The colors alternate when the number-facts are arranged in proper order.

The cards are prepared for the use of children just beginning the study of numbers, before expression by means of figures and signs is attempted. The aim is, by furnishing suitable subjects, to aid children in *making problems.* The cards are intended to be distributed to the children for their class exercise, and form a bright, attractive and efficient means of bringing the rudiments of number within easy comprehension of the little ones.

The Pupils' Series of Arithmetics.

By W. S. SUTTON, Supt. of the Houston Public Schools, and W. H. KIMBROUGH, Principal Oak Grove School, Dallas.
Primary Book, Boards, 82 pages. Introduction price, 18 cents. By mail, 22 cents. **Intermediate Book**, Boards, 130 pages. Introduction price, 24 cents. By mail, 30 cents. **Lower Book** (Primary and Intermediate Books combined). Boards, 30 cents. By mail, 35 cents. Cloth, 40 cents. By mail, 45 cents. **Higher Book.** For Intermediate and Grammar Grades. 280 pages. Cloth. Introduction price, 60 cents. By mail, 70 cents.

AN almost tyrannous pedantry assumes that the teacher has neither knowledge nor skill, and that the pupil has neither industry nor intelligence. Arithmetics too frequently present to the skilled teacher dreary pages of commonplace theory, and too often require of the pupil mere routine work, useless and dispiriting. It is believed that the Pupils' Series will be acceptable to those teachers who demand textbooks in which a minimum of theory comports with a maximum of practice. The problems are many, varied and original, furnishing material for work in the practical affairs of life. There is no waste space.

The **Primary Book** embraces the four fundamental operations, the whole book is devoted to practical work. While this is true, sufficient theory, without consumption of space, is introduced by a system of lessons in ORAL WORK and ORAL DRILLS to develop in the pupil's mind an almost unaided perception of the truths necessary to his advancement.

The **Intermediate Book** embraces practical work through the four operations cancellation, factoring and properties of numbers, simple and decimal fractions, percentage and simple interest, — the pupil being led to the comprehension of truths before formal definitions and rules are thrust upon him. Special attention is given to the work in addition, there being numerous exercises in abstract work and in problems. Division is taught in its two phases, subtractional and partitive, and the distinction between the two is plainly drawn. The treatment of factors and multiples is especially clear, and much work is provided in order that the pupil's knowledge of smaller numbers may become so thorough that the apprehension of the larger numbers will easily and naturally follow. In fractions, compound numbers and percentage, simplicity is the distinguishing feature.

The **Higher Book** embodies within its 275 pages all that is essential to a thorough teaching of the principles of numbers. It will be welcomed by those progressive teachers who sympathize with the demand for shortening and properly adjusting the distorted course of secondary studies.

The authors have believed that many of the pages of bulkier volumes are pretentiously filled with subdivisions which need no stress and no illustration; that the thorough development of the fundamental theories and principles will enable the pupil afterwards to pursue, if need be, any so-called department of the science to any degree of refinement; and that this thorough development can be effected with much less than the usual expense, both of labor and of time, to the consequent relief of the entire course, and the giving of opportunity for the earlier acquisition of subjects now regarded by all as necessary for usefulness in life.

SALIENT FEATURES. — 1. Notation is presented in a comparison of the two methods, by which the essence of the decimal system is seen to consist in the power of position, rendered universally effective by the use of the nought. Gaining this knowledge, the pupil has the key to decimal notation.

2. The Four Fundamental Operations are briefly given and the principles, which are clearly illustrated, are further developed by the pupil in the solution of many problems.

3. In Properties of Numbers the processes of factoring, with the illustrative work in multiples and divisors, are designed to assist the pupil's insight into number relations. The subject is thoroughly treated in each separate case, and comprehensively in a review.

4. Fractions: This subject, hitherto ungraded as to difficulty, is so presented that the pupil thinks from the first: he does not rush without thought through childish processes of reduction, addition, etc., only to bring up with a sudden shock at the insuperable obstacle division; his mind is called into activity, at the outset, in the acquisition of that knowledge by which division, in its turn, becomes as simple as multiplication. A review confirms what he has learned.

5. Compound Numbers, Proportion, Percentage, Evolution, etc., abound in forms and illustrative processes. Each department of the work closes with a review in which many original problems, addressed to the knowledge and to the active interest of the learner, serve to utilize and clinch every principle previously gained.